

FRONTISPIECE

PLANETARY DIVINITIES Woodcut illustrations in Johannes Schoene:
Opera Mathematica, Norimbergæ MDXXVIII

THE ROYAL ART OF ASTROLOGY

ROBERT EISLER

WITH A FRONTISPIECE, SIXTEEN PLATES,
FORTY-EIGHT ILLUSTRATIONS IN
THE TEXT AND FIVE DIAGRAMS

'Knowest thou the ordinances of heaven
canst thou set the dominion thereof in the
earth?'—Job, xxxviii, 33

*Par ainsi donc, o monde lunatique
Ayes pour tous cestuy seul prognostique
C'est que pour vray tous les prognostiqueurs
Sont et seront ou moqués ou moqueurs.*

Bonaventure des Périers
c. 1544 A D

LONDON
HERBERT JOSEPH LIMITED

TO ALL HIS BRITISH FRIENDS
AS A TOKEN OF HIS DEEP GRATITUDE
FOR ALL THE KINDNESS AND GENEROUS HELP
RECEIVED BY THE AUTHOR

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He has to thank the President and the Fellows of the Royal Asiatic Society for permission to reproduce the Arabic celestial globe fig 6, Prof Dr Fritz Saxl of the Warburg Institute for lending him a number of books from his private library which are not to be found in the Bodleian, and for permission to reproduce a number of illustrations from publications of the Warburg Institute, now of the University of London, Lt Col J E Nicholson, Douglas, I o M, for the kind loan of the block for fig 19, the late lamented Sir James Jeans, the Cambridge University Press and Penguin Books Ltd for permission to reproduce the diagram printed on p 34, fig 9, p 73, fig 13, p 79, the Director of the *Musee du Centenaire* Brussels for permission to reproduce the Warka tablet pl XVI c, the Cambridge University Press for permission to reproduce a number of diagrams from Houseman's edition of Manilius' *Astronomicon*, vol II, pp XVI XXVII, the editors of the *Loeb Classical Library* for permission to reproduce the two star maps figs 7 and 8 from the Loeb edition of Aratus, the editor of *News of the World*, for permission to reproduce the portrait of Miss Adrienne Arden, the editor of the *Sunday Chronicle* for allowing the use of Gipsy Petulengro's portrait, *Pictorial Press* for permission to reproduce the photographs of Mr Louis de Wohl on our pl II from the article 'Astrologers Again' in *Picture Post*, Prof Dr Ernst F Weidner, now of Graz University, for the courtesy of fig 10, p 75

Finally, he would like to reprint here—if they were not so well known—the beautiful lines from the *Proverbs of Solomon* (XXXI 10 15, 17, 23, 26f, 29, 31) in praise of one who not only typed the whole of this book as well as a number of others before this—but actually provided the author by her tireless and devoted work with the leisure necessary for writing these pages and all else he has been able to produce in these six years of exile and failing health

R E

Maugersbury nr Stow on the Wold Glos

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THE ROYAL ART OF ASTROLOGY

I

* ASTROLOGY FOR THE MILLION

ON August 16th, 1941, Mr Tom Harrison of "Mass Observation" revealed in a masterly article in *The New Statesman* a curious fact which, until then, does not seem to have been realised by a considerable section of the British public. It was and is possibly still ignored by the great majority of those who get their daily news from the more dignified and responsible papers, but rarely condescend to throw more than a fleeting glance at the products of the sensation mongering "tabloid" Press. They hardly know that "the rag," although ostensibly subscribed for the cook, is more often than not first read by her mistress after the lord and master of the house has carried away *The Times* or the *Daily Telegraph* to his distant office. Even on Sundays the respectable gentleman engrossed in his copy of *The Observer* may fail to notice what column of *The Sunday Express* or its various colourful competitors is most eagerly read by his wife and his more or less adult daughters. Or he may have found it a safeguard of domestic peace to turn a blind eye to an otherwise rather alarming symptom of the state of widespread intellectual destitution which has become so glaringly and painfully obvious in the decade following upon the world economic crisis of 1929, characterised by a hitherto unparalleled, obstinately persistent, wholesale unemployment of capital and labour.

The millions who could be so easily bamboozled into accepting the "economic blizzard" as a visitation from heaven, instead of apportioning responsibility where it belonged and taking the appropriate remedial action, the gullible victims of bucket shops and shady promoters, credulous enough to believe that there is a fated "tide in the affairs of men" similar to that raised by "the moist star upon whose influence Neptune's empire stands", the simpletons who were willing to swallow the excuse that "prosperity and depressions" or "crises"—a Greek word for "judgments"—are due to what Continental and American economists are wont to call, by a traditional astrological term,

"(2) Interest and belief have tended steadily to increase since the war

"(3) The quality of belief is complex, often superficial and generally confused. Press astrology is itself so individualist, wide and changeable, as to encourage this. The mixture of common sense personal advice with international interpretation of developing events gives mass astrology a multiple appeal, and it is possible to reject one part and accept another

"(4) Total devotees of astrology are comparatively rare, but there are quite a number of them, mostly among working class women, like this Lyndoe fan

'I think astrology is the most reliable way of telling the future. Astrologers are so often right. I read him and study him regularly, and I find it's a great help. Things don't seem to go wrong anywhere near so much as before I started reading him

'I really have great faith in him. I certainly think it's the only way of getting near the truth—it's thousands of years old and people have trusted it, so I don't see why I shouldn't now. I plan by him. If he said I'd get run over on a certain day if I went out, I would never leave the house even to go into the garden'

"(5) There is a considerable amount of shame about admitting you believe at all in astrology. Very frequent are comments like this one from a person asked if she believed at all

'Good heavens, no. Of course I often read the forecasts and I always look at my birthday. Sometimes they aren't bad. I think Naylor is quite good. They were all very bad when the war broke out, because they all said there wouldn't be one. I think I really realised for the first time how bad they were, didn't you think so? Of course, if I read that *I might have a terrible accident it would make me nervous*, but I don't really believe in them'

"(6) The depth of belief ranges all the way from occasional humorous interest to fanaticism. But after studying hundreds of comments and conversations, it is impossible to doubt that astrology is now a very considerable influence in determining the minor decisions of many private lives, and an appreciable contributory factor in influencing attitudes to wider international events

"(7) The reasons for belief or interest are complex. Briefly, astrology offers to the ordinary person

- (i) Common sense advice about oneself
- (ii) Conservative guidance largely telling people to look after their own interests carefully
- (iii) A reflection of oneself (and, indirectly, flattery therefrom)
- (iv) The excitement of 'coincidence' and 'luck' when predictions come right
- (v) Constant emphasis on the bright side (both personally and nationally) Astrologers almost unanimously predicted NO WAR, and have since often predicted that the war would be over well before August 1941
- (vi) Simple explanations of the reasons for what is happening in this complex sudden world
- (vii) Some degree of forewarning of what may be expected to happen next
- (viii) A gambler's chance (at least) in prediction possibilities, and associated with this, a sort of general, racing tipster interest in affairs
- (ix) A crude code for day to-day behaviour, and a crude focus on the better aspects of the future
- (x) An element of 'science' and scientific validity plus an element of mystery and history and myth
- (xi) 'Fun' and readable writing (Lyndoe is a superb journalist)

"(8) Above all, the obligations of astrology are negative and negligible. You do not need to have any social contact, cash-transfer, unselfishness, moral code, co-operation or consistency to follow its advice—like this for people born between July 24th and August 23rd (birthday advice is a feature of practically all astrological items)

'Open air and exercise are necessary to you this week, and at least one romantic episode will come your way out of doors. A new boy friend is going to expect a lot from you, in fact, he will probably annoy you by treating you more like a boy than a girl(!) However, this will be a compliment from him. Gold and violet for luck.'

'(9) Similarly, the effort of interest and belief is minimal. Anyone, however apathetic or ignorant, can be in some degree interested, without becoming engrossed, and without taking any permanent, definite or outward stand about anything. And there is no service, even on Sunday.

"(10) The degree of disillusion in astrology's international

predictions does not correspond to the frequent major errors made. This is largely because people want to believe something good, and get pleasure from expecting something good, even if it doesn't happen.

"(11) Further, people want to believe in something which at least appears to interpret events and trends in the complex and dangerous civilisation in which uneducated people find themselves confused, worried, many of their certainties weakened. Mass astrology reflects the underlying insecurity and worry of the post 1930 years. It offers immediate, temporary (but continually renewed and rearranged) antidotes.

"What is the effect of all this? Astrology is essentially conservative (in the strict sense of the word), sedative, private, unsocial. The events of 1941 are explained by the birth moments of the principal characters—Churchill, Hitler, Stalin, Roosevelt. The principal operative factor in world history is the moment of birth of each individual in it, and the individuals who come to the top can do so only if born at right moments—the fortunate aristocracy of time. There are elaborations around this theme, but it is fundamental in astrology, and astrological theory, whether correct or not, is opposed to the trend of scientific thought in the past century, of liberal and socialist thought, too.

"Probably few astrologers realise this, but it comes out very frequently in their work. For instance, we can trace the extreme right wing of astrology into Rosicrucianism, British Israelites, Social Credit, *Yogi* and *Parliament Christians*. Lyndoe characteristically starts his latest best seller (*Your Next Ten Years*) with a long quotation from Arthur Bryant, and his first and principal prediction is 'the sudden emergence of a World Leader. His coming in the early part of the year (1941) is as plainly indicated as was the original star of Bethlehem's humble focus' (See below, p 20, fig 1).

Since the manuscript of this book was first handed over to the publisher, a year after "Mass Observation" had investigated the matter, the belief in astrology and its influence on public morale have been discussed in the House of Commons. Mr Keeling, Conservative member for Twickenham, having asked the Minister of Information whether he could see his way to stop astrological predictions about the war, Mr Brendan Bracken replied that "no sensible person takes such predictions seriously." This caused a lively debate and a correspondence in *The Times*—including letters by Sir R. A. Gregory and Mr

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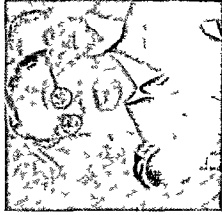
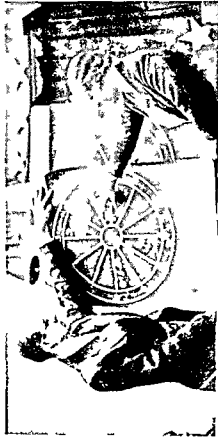


PLATE I

Portraits of the Newspaper Astrologers Mr. Alexander Rupert explaining the horoscope of Jesus Christ
 Messrs. Gipsy Petulengro
 Arden Gipsy Petulengro
 Mrs. Sudbury

Edward Lyndoe R. H. Naylor
 (Photographs by courtesy of Picture Post)

Tom Harrison—and another humorous third leader on "*Star Gazing*"

On June 17th, 1942, Mr Samuel T Fripp, L D S, R. C S, late Capt. Royal Flying Corps, wrote to the Editor of *The Times* complaining about "scientists repeatedly refusing to give attention to this great subject" "It is now time to challenge this ignorance and prejudice There must be given an opportunity to substantiate these great claims" (of astrology) "to the intellectual side of public thought I do challenge them Will they take up the gage?"

Naturally, the Oxford Scientific Club did take up the glove thrown down to scientists in general A public challenge debate, "Astrology, Superstition or Science?" was staged in St Mary's Library on Wednesday, October 28th, 1942, with the then President of the Oxford Union, the West Indian Mr Cameron Tudor in the chair, between Capt Fripp and the present writer, whose arguments will be found in this book The defender of astrology, having elected to speak last, insisted on a vote being taken by the audience—a typical sample of Oxford town and gown, women and men, undergraduates and dons The vote went against Mr Fripp in the proportion of 12 19 The dice were, however, loaded against him, since in wartime most of the students and teachers present were, of course, scientists with a matter of fact outlook on the world and little sympathy for occult intuitions

"The people who believe in astrology are ordinary human beings, average civilised citizens They are reacting in a normal way to these times, when spiritual and moral satisfactions and goals are inadequate to human need The remarkably rapid development of astrology on to its present mass basis is a symptom of the mental condition of people (especially housewives) in Britain (and elsewhere)

"It would be quite misleading to deduce from this analysis of the beliefs prevalent among 'ordinary people,' 'average civilised citizens,' that the same craze is not equally found among some of the men and a great number of the women of the 'governing classes.'"

This is how Aldous Huxley describes in his witty and amusing novel "*Chrome Yellow*" a once well known hostess the owner of one of England's stately homes

"Most of Priscilla's days were spent in casting the horoscopes of horses and she invested her money scientifically, as the stars dictated She betted on football too, and had a

large note book in which she registered the horoscopes of all the players in all the teams of the League”

Incidentally, this is exactly what the Roman and Byzantine ladies did in order to know beforehand which one of the famous gladiators or charioteers would be victorious in the circus. There are actually in various museums Greek papyri containing the horoscopes of ancient jockeys, horses and gladiators

“The process of balancing the horoscopes of two elevens one against the other was a very delicate and difficult one. A match between the ‘Spurs’ and the ‘Villa’ entailed a conflict in the heavens so vast and so complicated that it was not to be wondered at if she sometimes made a mistake about the outcome”

Having invited a successful author who produces his trashy books by automatic writing under direct spirit guidance, “Priscilla” asks him

“Tell me, Mr. Barbecue Smith—you know all about science, I know——” A deprecating noise came from Mr. Barbecue Smith’s chair. “This Einstein theory. It seems to upset the whole starry universe. It makes me so worried about my horoscopes. You see.”

We do see that this is the crux of the whole matter. Indeed, it is not only “this Einstein theory”—propounded, as another society lady once told a shocked dinner-party, “by that wicked Viennese professor who invented those indecent operations destined to make old men relatively younger for a certain space of time”—which makes “action at a distance” by stars, some of which are known to be millions of light years away from this earthly vale of tears, appear to be a rather precarious assumption. As we shall see below, p. 235, it is the much older Copernican theory which—so early as A.D. 1543—once for all upset the whole starry universe and made all thinking people, to say the least, rather doubtful about the horoscopes which seemed so scientific and “mathematical” to the followers of old Ptolemy.

II

ASTROLOGERS' FACES AND FORECASTS

" *genus hominum potentibus infidum, sperantibus fallax,
quod in civitate nostra et vetabitur semper et retinebitur*"

TACITUS, *Hist* 1 22

" a tribe of men who betray the great, and befool the credulous—a tribe that in our city will always be proscribed, and always hold their ground "

trans G G Ramsay

" Let now the astrologers, the stargazers, the monthly prognosticators stand up and save thee from these things that shall come upon thee "

Isaiah, xlvii 13

THREE weeks after the *New Statesman* published Mr. Tom Harrisson's brilliant report, *Picture Post* earned the gratitude of a vast number of its male readers by publishing characteristic portraits of some of the celebrated newspaper "star-clerks" or "star-redes" (as they would have been called in former times). They enabled the many who can and must judge the character and intelligence of their fellow-citizens by looking at their faces every day of their lives, to form their own opinion about the most prominent soothsayers who have taken it upon themselves to supply humanity's persistent need for prophets, now that the ministers of organised religions all over the world have humbly renounced any claim to be more able to foresee the future than the unconsecrated laymen or women.

So we were at last enabled to look (pl 1) with awe and admiration at that modern Chaldaean Sibylla or Delphic Pythia, Adrienne Arden, who supplies the *News of the World* with her forecasts, at the youthful face of Gipsy Petulengro, the crystal-gazer, star-watcher of *The Sunday Chronicle*, who claims to be eighty-one years old, and may be hoped soon to attain the blessed age of 1800 years claimed in his time by the "Comte de St Germain," *alias* John the Evangelist; at the shrewd-looking profile of that "superb journalist," Edward Lyndoe—the prophet of the world-saviour, about to appear in 1941, for whom we are, alas, still waiting—and finally at the countenance of Mr R H Naylor, who not only contributes to *The Sunday Express*, but edits his own special periodical *Prediction*. *Picture Post* showed the prophet speaking into the microphone—"Micah with the mike," as one American member of his audience at the

astrologers' luncheon at Grosvenor House in November, 1941, good-humouredly described him to the present writer

Into the bargain we got a precious photograph taken at the Astrologers' Convention at Harrogate in 1939, immediately



Fig 1

before the outbreak of the war. It shows Mrs. A. Sudbury Hurren and Mr. Alexander Rupert, deducing, by means of astrological interpretation, the main events recorded in the Gospels from a conception horoscope of Jesus Christ, drawn for the "28th of March 7 B.C. 3.30 p.m. Saturday"—a date which is, to say the least, extremely unlikely to have been the day on which the Galilean prophet started his life in this earthly world of darkness.

The impressive picture will bear witness in ages to come to the liberal tolerance extended to the queerest customers in this great country. We have, indeed, at great cost learned to suffer fools gladly in the six centuries since an Italian astrologer, Cecco d'Ascoli, was burnt alive at the stake in Florence by the Inquisition (A.D. 1327) for having calculated the nativity of the Christ (fig. 1) and deduced His crucifixion from the position of the stars at His alleged, in reality wholly unknown birthday, and since another astrologer and physician, Pietro d'Abano was incarcerated for a similar crime in the prison of the Santo Ufficio, where he died before he could be cremated by his executioners.

On the back of the page showing these photographs the readers were offered a striking tabulation of astrological forecasts culled from the newspaper columns written by the wizards there portrayed, side by side with a column showing what really happened in the following days or weeks.

Here are a few significant examples of their most conspicuous failures to catch even the faintest glimpse of the immediate future.

Lyndoe, in *The People*, August 13th, 1939 "Anyone who listens to and believes that war by the end of August rubbish is beyond hope." On August 27th his column is headed "Hitler will not do it." On the 1st of September Poland was invaded, on the 3rd of September France* and Britain declared war.

Naylor in the *Sunday Express* was no better. On August 27th he wrote "In this column, for years I have constantly laboured these points. Hitler's horoscope is not a war horoscope. If and when war comes, not he but others will strike the first blow." (Incidentally, this is how Hitler and Goebbels wanted the facts to be mis-represented.) "Even at this critical stage I re-affirm the prediction made in this column some time ago, that there will be no war over Danzig."

In the same vein the Romanyn *Peer Petulengro* promised in the *Sunday Chronicle* of August 20th that "the planets ruling over this country will smooth over the difficulties between it and Germany."

On April 14th, 1940, Lyndoe prophesied that "the invasion of Norway may be regarded from an astronomical point of view as a major blunder on Hitler's part." On April 21st he

* In France too the most renowned astrologists denied in the first months of 1939 unanimously that this year would bring the dreaded war (M. René Dussaud *Syria* 1941, p. 182).

wrote, "I told you long ago that an Allied victory will not long be delayed" Yet on May 3rd the British had to evacuate Norway, although Adrienne Arden had read in the stars on April 14th that "the worst period (in the Scandinavian struggle) for the Nazis arrives in the first fortnight in June"

On May 5th Lyndoe foresaw "a lessening in some form of the present tension events favourable to the democracies" On May 12th the Germans over ran Holland and Belgium

On May 12th Lyndoe headed his column "*A Growing Tide of Victory*" "It is fortunate for us that Hitler has defied every possible astrological portent" On May 15th Holland collapsed, and on the 24th the King of the Belgians surrendered

Conversely Naylor foretold on April 28th, 1940, that Germany would "obviously be preparing to spring on her quarry (Sweden) within a few days either side of the New Moon of May 7th" She had, however, not yet done so, while these lines were being written in March, 1942, although "Old Moore" in the *Sunday Dispatch* of May 5th had the same prophetic vision as Naylor

On May 19th Naylor forecast "better news towards the week end"—the week end on which Belgium had to give up her struggle as desperate

This appears to have been too much either for the long suffering editor of *The Sunday Express* or for the seer himself, whose feature was suspended forthwith

"We are"—Lord Beaverbrook announced *ex cathedra*—"living in tense, grave days *The Sunday Express* believes that the light, popular entertainment of normal times is out of place now For that reason it has decided to discontinue the weekly article of astrological predictions" This verdict shows, at least, what the newspaper magnate himself thinks about the "tripe" (below, p 24) provided for the readers by his star clerk

But the public had other things to think about in the week of Dunkirk than to remember the discomfiture of its pet prophet, who was soon reinstated in his former place of honour and profit

On June 2nd Lyndoe forecast "a big turn of the tide"—i.e., a victorious counter offensive in France "We shall have touched bottom by June 9th." We did not on June 21st France broke down completely

Neither Lyndoe nor "Old Moore" nor Adrienne Arden forecast the entry of Italy into the war on June 19th With her beautiful eyes shining ecstatically, the new Cassandra read in

the stars on June 2nd that "the Nazis are rapidly reaching breaking point" On June 9th, 1940, she saw in Hitler's horoscope that "he is now at the summit of his power, but on the eve of his fall"—"the day of reckoning is coming in September" (of 1940, if you please!)

On May 19th, the beginning of the battle of France, Petulengro saw in the stars that Hitler had been "sadly misled by his advisers" "According to his horoscope, it is the beginning of the end"

On April 6th, 1941, Lyndoe foretold that "Hitler is about to make further plunges. The main result may well be a military debacle. You can reckon the period April 6—26 as holding the key to Germany's defeat" In reality Germany invaded Greece on April 6th and the British evacuated it on April 29th

On May 18th he wrote "From now begins Germany's maximum effort—violent as it will be, Germany's plan is doomed to failure" On May 25th Hitler is advised "to blow the sawdust out of his skull" On May 20th the Nazis invaded Crete—a move not foreseen by the great Petulengro—which the British lost on June 1st

In the *Sunday Express* of June 22nd, on sale a few hours after Germany had invaded Russia, Naylor's devotees could read the following wise counsel "Don't count on operations in the Eastern Mediterranean being held up because of differences between Hitler and Stalin. I still hold to my forecast that they won't quarrel yet"

On the next Sunday the prophet had to admit shamefacedly "I did not expect Hitler and Stalin to fly at each other's throats until next spring"

It must have been a consolation to him that the other most influential astrologer Lyndoe, had prophesied on this same memorable Soviet Sunday that "the counter revolution will not fail this time" "shuffle and squirm as they may, Stalin and his junta cannot escape" (*viz*, the forecast "blood bath")

The following week the "superb journalist" started his column with a line which commands the unwilling admiration of all who can appreciate the value of sheer brazen effrontery in a difficult situation "Why the surprise about Russia? Both the German attack and the link up with Britain were announced here in 1939" (In 1939, forsooth, when the rosy expectations of wishful thinking had been sorely disappointed by comrade Stalin's prudent "link up" with Herr von Ribbentrop and his master¹)

A tabulation of equally gross blunders could be continued up to the day when this book will at last be going to press

The argument put forward by many readers of *Picture Post* in their "letters to the editor" criticising the article in question for having given unfair prominence to the misses in comparison with the hits, is quite irrelevant, for a very simple reason—a closer analysis of both shows clearly that hits were obtained only when the events—unfortunately all too rarely—corresponded with the expectations of the optimist—i.e., the wishful thinker—while the misses were without exception failures to forecast catastrophes which might have been anticipated by ordinary reasoning as well as by divination—if there is such a thing—but which could in any case not be foretold to a readership of credulous millions without "creating alarm and despondency"

As everybody knows, this would have been a punishable offence under the Defence Regulations, while "fortune telling" in itself is only a misdemeanour under the Vagrancy Act of 1824 (5 Geo IV C 3), which could be stopped at any moment if it were wise to drive a potentially dangerous essentially pro-fascist activity (above, p 16) underground Even if the confident forecasting of catastrophes in themselves possible and even probable had been permissible under Defence Regulations, it is obvious that a pessimist interpreter of the stars would have seriously diminished the circulation of any mass produced newspaper among Carlyle's "twenty seven millions, mostly fools," and, therefore, been sacked by the editor

These elementary considerations account fully for the absolute futility of newspaper political astrology, of which the star clerks in question are fully aware At least, Gypsy Petulengro was heard to say—with commendable frankness—at Miss Foyle's Luncheon in November 1941 "If we can give them something they enjoy, in spite of its being called tripe, well and good They probably like tripe"

The inevitable consequence of this state of affairs being known to every intelligent person is that the "more serious" astrologers, not writing for the papers and confining themselves to their extensive correspondence and lucrative private consultation business, affect to disclaim any affinity between their own practice and that of "the newspaper astrologers"

But if you turn to the literary output published by these pundits of the higher, more esoteric order in their special periodicals or to the sometimes voluminous books they publish,

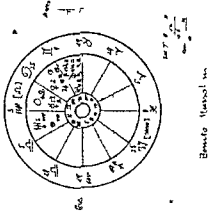
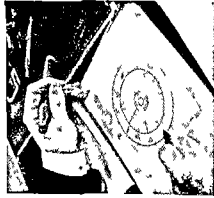
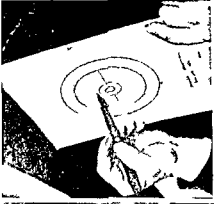
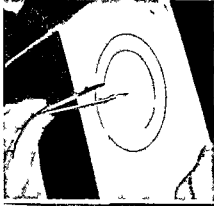


PLATE II

Astrologer Louis de Wohl works out Mussolini's horoscope foretelling the Duce's death by violence
Photographs by courtesy of Picture Post

you find exactly the same orgies of wishful thinking as in the newspapers, only presented in a more "high brow" literary style

Readers wanting to study for themselves a characteristic sample of this literature might have a look into that curious book *Hitler's Last Year of Power*, published in London 1939, shortly before this war by one "Leonardo Blake"—abusing for his hybrid trading pseudonym the names of one of the greatest scientific minds of all times and of one of the greatest mystics of this country. He says on p 182 "England has nothing to fear from Japan" In a supplement added at the publisher's request after the outbreak of the war—which should not have occurred, according to the stars as interpreted by the prophet—he predicts (p 13) "Peace in summer 1940," ending up on p 16 with the encouraging appeal to the nation "With Chamberlain to a New Europe! With Chamberlain to the Freedom of Mankind!"

We can look forward to finding further enlightenment in a sequel to this book, *Blake Explains*, upon which the well intentioned comforter of the human race is said to be engaged at the moment, and which is to tell his readers why he himself and other star gazers have so often been wrong in the past, and how they could avoid similar mistakes in the future *

III

HOW HOROSCOPES ARE CAST

THE modern practice of forecasting the march of events for whole countries, nations and their rulers from the position of the stars, which has been dealt with in the preceding chapter, is—as we shall see below, pp 165 ff—much older than the individualistic astrological fortune telling for every Tom, Dick and Harry able and willing to pay for it

But since the majority of modern star clerks are quite ignorant of the ancient methods of "universal" or "mundane" astrology and "astral chorography," and base their prophecies concerning the political situation entirely upon a "genethiological"

* I have just heard that this book is not to appear after all. The author evidently considers the policy of the penultimate governor of the Bank of England never explain never apologise the wisest course to take for one who wants his errors to be if not forgiven at least forgotten.

point where a constellation rises (the Ascendent) and where it sets (the Descendent, *Occidens, Dysis*). The vertical line is meant to show the meridian, a great circle running through the pole-star in the north and the southermost point of the horizon, thus marking "Mid-heaven" (Latin *Medium Coelum*, Greek *Mesouranēma*), and opposite it "Mid-heaven below the horizon" (*Imum Medium Coelum, Antimesouranēma*). Then each quarter of the disk is divided into three sectors, and the enigmatic and forbidding-looking signs ♄ ♀ ♁ ♃ ♄ ♀ ♁ ♃ ♄ ♀ ♁ ♃ are inserted into the twelve parts, each of which receives its number I—XII in Roman numeral signs. Finally another series of seven signs ☉ ♄ ♀ ♁ ♃ ♄ ♀ are distributed over some of the sectors.

We need not presume so far as to ask the adept to explain his procedure to us, since we can find a vast literature expounding it (below, p. 287) in our public libraries, the most important part of which—as the present writer has often noticed to his great surprise—is quite unknown to modern astrologers, unable, as often as not, to read Latin, let alone Greek or Arabic, hieroglyphic, hieratic or demotic Egyptian, cuneiform Babylonian or Sumerian.

To this day the devotees of astrology never tire of repeating the bitter complaint of Alfred John Pearce, who wrote in his *Textbook of Astrology* (1911): "Why is it that the great majority of learned men of the nineteenth and the present century have denied that there is any truth in astrology? The reply is: Because they had never investigated it, being too prejudiced against it to do so."

This wanton accusation against modern scholarship is in itself sufficient proof of either an absolute lack of good faith or an almost unbelievable ignorance of all the learned work dedicated to the study of astrology from the time of the great Frenchman Saumaise (*Salmasius*, 1648), the correspondent of Milton, to our own age which saw the deciphering, editing and translating of the most important Mesopotamian and Egyptian astrological texts, the publication in more than a dozen volumes of the *Catalogue of Greek Astrological Manuscripts*, under the direction of Franz Cumont and Wilhelm Kroll, the re-discovery and publication of the *Sphæra Barbarica* by Franz Boll (1904), of the astrological texts of Hermes Trismegistus by Wilhelm Gundel (1936) and the searching investigation of all the available material by such men as A. Bouché-Leclercq (1899), Carl von Bezold (1914), Reginald Campbell Thompson (1900), Charles

Virolleaud (1905 ff), Aby Warburg and a whole group of younger men inspired by their example. Not one item of the list of their books given below, pp 290 ff, is ever quoted by any one of the defenders of astrology. They will not acknowledge honestly the decisive fact that their futile practices have been investigated with the greatest care and impartiality by the foremost scholars of the leading Western nations for now almost three centuries, and that not one of these has failed to condemn them as the stale, superstitious residue of what was once a great, pantheistic religion and a glorious philosophical attempt to understand and rationally to explain the universe, a bold enterprise to which we owe not only the whole of our astronomical knowledge, but the most essential part of all our physical science.

IV

IMAGINARY DIVISIONS OF IMAGINARY CIRCLES

WHY, first of all, does the astrologer draw his two circles symbolising the "zodiacal belt"? Are there anywhere in the real world any celestial circles, orbs or rings such as we see on our so-called armillary spheres (fig 2) into which the "zodiacal signs" are inserted, and which we can suppose to wheel or carry these "fixed stars" around the earth? And what is the meaning of these mysterious "zodiacal signs" (ch xi), and to what do they correspond in the physical world studied by the astronomer?

As to the first question, it is hardly necessary to say that for the modern scientist these circles are wholly imaginary and purely geometrical constructions, no more to be found in physical reality than the meridian of Greenwich or the equator crossed by ships on the way to the Cape.

The Babylonian astronomers did, however, believe that all the stars, as well as the sun and the moon, travelled on the "felles" (*harranē*) of three big wheels, the common centre of which was supposed to be fixed in the northern pole star. These were believed to belong respectively to the god of the air (*En lil*), the god of the sky (*Anu*) and the god of the Ocean (*E a*).

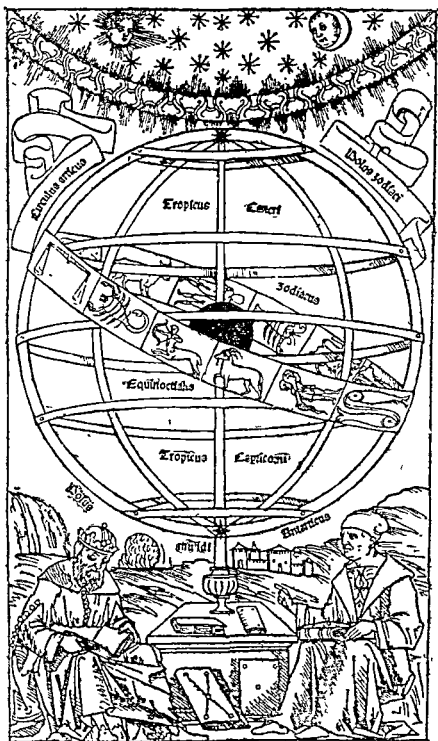


Fig 2

The prophet Ezekiel (1 15-19) too knows these wheels (*ophanim*) of the sky "full of eyes"—i.e., of stars

The Greek philosopher Anaximander of Miletus (611-546 B.C.), who constructed the first celestial sphere, believed these wheels—in Greek *trochoi*—to be material realities. Their felloes he imagined to be hollow, full of fire and emitting the light of the sun, the moon (and the stars) through circular openings of larger and smaller size turned towards the earth in the centre. He believed the earth to be like a cylindric drum, the height of which was one-third of its diameter. On the circular top of this cylinder he drew the first map of the earth. The vault of the sky suspended over it he divided, following up the Babylonian idea of the three celestial "wheels," into a number of broad hoops pierced in the proper places, so as to let light shine through them upon his model of the earth, as it rotates around an inclined axis pointing towards the pole star, not unlike the rod of a sundial, the celestial canopy overshadowing the earth like a gigantic open, more than hemispherical umbrella, the stick of which rests with the handle end on the ground, the ribs corresponding to the celestial meridians, the ferule pointing to the celestial North Pole. The hollow hoop, the fire-breathing hole in which is the sun, he assumed to be twenty seven or twenty eight times as large as the girth of the disk of the earth, the wheel of the moon he took to be nineteen times as large as the circle surrounding the earth. The movement of the sun between the tropical points—which he thought to be caused by seasonal winds (obviously the monsoons known to the Babylonians navigating the Persian Gulf and the Indian Ocean)—he could illustrate by shifting the hub of his sunwheel, fastened to his world axle at an oblique angle by means of meridian hoops. A smaller, otherwise similar hoop represented the orbit of the moon, five others those of the planets. The "fixed" stars he imagined as perforations in the felloes of similar wheels (presumably three, like the Babylonians), one for the northern, one for the circum-equatorial, one for the most southerly stars.

The model of the world he seems to have constructed, must have been somewhat like the curious three-dimensional version of the "Wheel of Fortune" designed by Wenceslas of Budovice in 1490 (fig. 3) showing in the centre of the world the terrestrial globe, on top of it St. Vitus' Cathedral on the Hradcín of Prague. If a merry-go-round structure of this kind and suitable size is built and a saddle seat—corresponding to Anaximander's

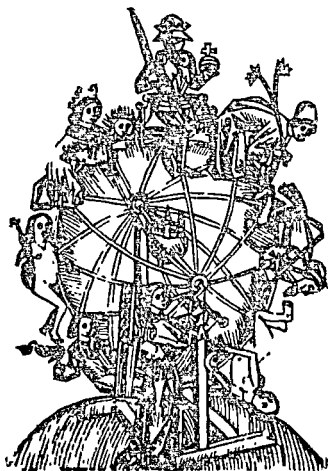
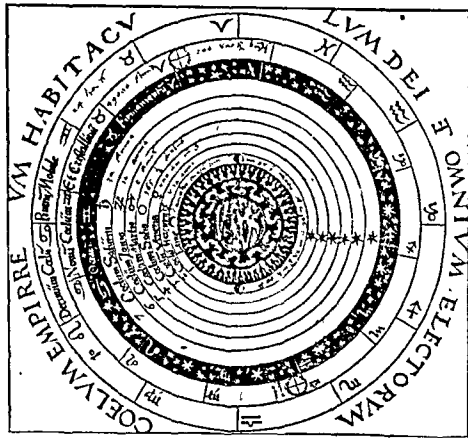
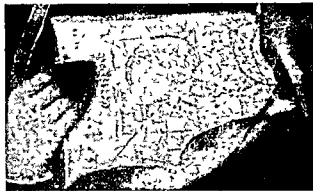


Fig 3

flat earth drum—is put instead of the church-model on top of the sphere through which the axle runs, the bottom of the globe being sufficiently weighted with lead, the observer can sit on it and see the armillary sphere move around him with the planetary figures placed within the broad hoop representing the ecliptic. Emperor Frederick III observing the stars from the roof of his castle at Linz was said by the malicious burghers of this city to sit in a mousetrap. He may have used a wire-contraption around the observers' seat similar to the planetarium invented by Wenceslas of Búdovič.



(a) The nine spheres of heaven From Petrus Apianus, *Astronomicum Caesareum*, Ingolstadt 1538



(b) Detail from Giorgio's "Three Philosophers" Photograph, Loew, Vienna

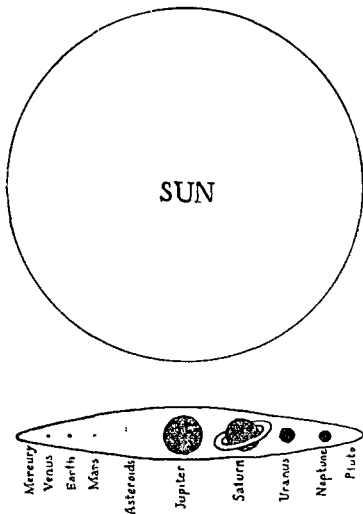
For an ancient observer, such as Anaximander and his Oriental teachers, who thought that the sun could be driven back from its apparent "solstitial" turning point by seasonal winds, the meteoric phenomena—clouds, storms in the atmosphere, which they believed to extend up to the "sphere" of the moon—appeared to be in the closest spatial relation with the orbits of the moon, the sun and the stars, so that they could plausibly be believed to influence each other.

These are the primitive ideas underlying the "horoscope" diagram, which is, essentially, nothing but a small, in many respects illogical (below, p 108), cross-section through an obsolete geocentric world model, "a diagram rather than a map," says Mr Rupert Gleadow—"because it cannot be drawn to scale" (What the astrologer tries to glide over by the admission that his diagram "cannot be drawn to scale" will be discussed below, ch xxiv)

For the moment it will be sufficient to remind the reader of a few well known figures. The atmosphere extends—in a highly rarefied state—to a height of about 200 miles, while the moon is about 239,000 miles away from the earth. The distance of the sun is about 400 times that of the moon. Our diagram shows the sun and the planets drawn to scale. If the distances were indicated on the same scale, the sun would be 11 yards away from the earth and Pluto a quarter of a mile away from the sun. A model constructed according to these measures would make the idea of a sun as big as an orange and all the major planets comparable in size to peas and seeds of various kinds revolving round a pinhead sized earth look rather queer.

As a matter of fact, the Greeks soon abandoned the old Babylonian idea of these wheels or hoops which could conveniently be represented by the rings of an armillary sphere (fig 2). Eudoxus of Cnidus and Aristotle (384-322 B.C.) replaced them by the idea of a number of spheres rotating within other spheres around the earth, long recognised as having itself the form of a spherical ball. Seven such spheres were supposed to carry the moon, the five planets and the sun, and an eighth the fixed stars, around the earth. Finally, certain ancient cosmologists imagined behind this eighth sphere, supposed to be the *primum movens* keeping the seven inside ones in rotation, a ninth, immovable sky as a system of reference against which the motions of the others could be plotted (pl. iii).

Most ancient representations of the celestial globe (fig 2)—*i.e.* of the eighth sphere of the "fixed" stars—show those



After Sir James Jeans, *The Stars in their Courses*. By permission of the late author, the Cambridge University Press and Penguin Books Limited

particular constellations through which an observer can see the planets and the moon thread their way, and which the sun obliterates, one after the other, by drowning them at dawn in the radiance of its rays—supported by a separate belt or hoop. This is the so-called “zodiac” (Greek *zōidiakòs kyklòs*, the “hoop” or “wheel,” supposed to contain and to wheel around

the "animals"—*zōidia*, below, p. 89) the outlines of which were believed to surround these groups of stars through which the "seven planets" (below, pp. 162, 168) seemed to pass in their courses. The famous Roman astrologer Nigidius—a contemporary of Julius Cæsar, called *Figulus* "the potter," because of this striking *aperçu* repeated to every client—compared it to a rapidly revolving potter's wheel.

Is it necessary once more to tell our readers, who can find in Sir James Jeans' lucid exposition of what the science of astronomy has taught the modern observer about the structure of this "*Mysterious Universe*," that neither the "spheres" nor the "hoops" or "wheels" supposed by our Babylonian and Greek spiritual ancestors to convey the stars around the earth have any physical reality whatsoever?

The very "vault" of the sky, the light- or dark-blue spherical surface we seem to see suspended above the horizon, is not made of blue glass or sapphire stone, but was known even to some of the ancient Greek sages as a purely subjective illusion due to the fact that our direct perception of depth does not reach beyond a certain distance, equal in all directions, with the result that on whatever point of the earth's surface we stand, we seem to be in the centre of a light- or dark-blue sphere extending immediately behind the stars. These are seen to move—but a very small distance only—behind the clouds.

V

THE SO-CALLED "HOUSES" (*LOCI, TOPOI*) OF THE SKY

IF the hoops or spheres supposed to carry the planets (below, p. 168) and the "fixed" stars around the earth have been eliminated by modern cosmology as purely imaginary assumptions, what are we to say of the ninth, absolutely empty sphere devised by Ptolemy for the purpose of having a permanent system of reference, at rest in relation to the terrestrial spectator, against which the rotatory (apparent) movement of the fixed stars could be plotted? Why should anyone have introduced such a physically meaningless construction which is, in modern terms, nothing but a system of co-ordinates (plate III) rotating together with the earth?

The reason for this procedure will become quite clear to the reader who tries to give a physical meaning to the astrologer's next step in drawing his diagrams. The circle connecting "the Ascendent" in the East (above, p. 27) with "Mid-heaven"

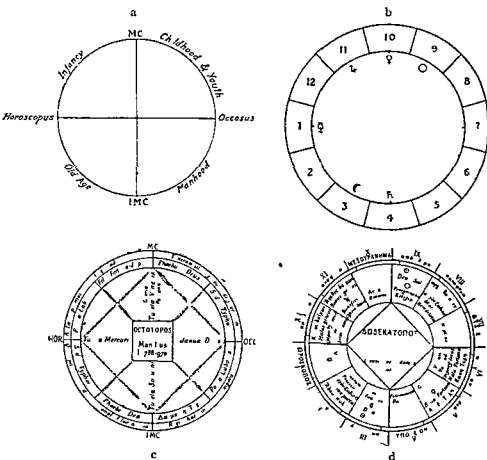


Fig 4

(*Medium Cælum*, *Mesouranēma*) in the South, with the "Descendent," (*Dysis*) in the West and the "Lower Mid-heaven" (*Imum Medium Cælum*, *Anti mesouránēma*) in the North is subdivided first into four quarters, limited by these points. It is then further subdivided into the, originally, eight "spaces" (*loci*, Greek *topoi*) of the so-called *Oktotopos*, still later into the twelve thirty-degree sectors of the *Dōdekatos* (fig. 4) often incorrectly called the "twelve houses of heaven," each

one of which has a particular name and an alleged function in the interpretation of the position of the fixed and "errant" stars found in them at the hour of an individual's conception or birth (fig 4 c, d and pl iv)

In the theory of the eight places, preserved in a Greek papyrus now in the collection of Michigan University, written in the second century A.D. but invoking the authority of the old Egyptian Asclepius (*Imhotep*, *Imouthēs*, below, p 127), the first sector in the East is called the *horoskopos* (below, p 40), and is said to decide the question of "Life" The next place, in the direction towards "Mid heaven," determines the means of gaining one's livelihood (*lucrum*), the third place determines "brothers" (sisters do not seem to matter), the fourth characterizes "parents," the fifth "children," the sixth eventual "illnesses" or "defects," the seventh the "wife," the eighth the manner and cause of "death" (pl iv)

This system of eight immovable sectors of the ninth sphere, into which the revolving "fixed" or "errant stars" move in rotation, was exposed in most beautiful verses by the great Latin poet Manilius in a book dedicated to emperor Augustus or possibly to his successor Tiberius Firmicus Maternus mentions it in a different form It has since been almost entirely supplanted by a wheel of twelve "cusps" (fig 4d) the *Dōdekatochos*, said to have been invented by Hermes Trismegistus (below, p 127) We have under his name an elaborate treatise assigning to the first sector—around the "Ascendent"—the name of "Rudder" (*οὐαξ*) or "Root" (*ρίζα*, *radix*, whence the modern term "radix horoscope"), "Life" or "Basis" It announces the essential fate of mother and child, determines the beginnings of the life in question and—in *potentia*—all the originally latent future developments of the child This sector is said to be dominated by the planet Mercury (below, p 170), giver of life and of the breath of life The second sector is called *Bios* ("life," also "livelihood," including vocation and means of life), or "Door of the Underworld" (*Ἡαῖου πυλῆ*) It is also called *argos topos* (translated *locus piger* by Firmicus Maternus, the Sicilian senator and astrologist who became a fanatical Christian in later life)—i.e., the "inactive place" The third sector is the place of Selēnē, the Moon goddess, also called the "arbitrary" or "intermundane place," because the moon was supposed to separate the sublunar terrestrial world from the upper spheres This sector determines what will happen to the child "abroad," dreams, religious

rites, financial transactions, diet, brothers, friends. The fourth place is the "subterranean centre" (*hypógeion kentron*), also called "hearth and home". It determines man's old age, parents, relatives, secret enterprises, family, treasure trove, post-humous fate. The fifth sector is called "good fortune". It belongs to Venus, who rejoices in it. It determines journeys," etc. The sixth place is called "bad fate," *prodysis* ("preceding descent") and also "intermundane space". It determines illnesses, slaves, enemies and chattels, sometimes vocation, the condition of the feet and their eventual defects. The seventh place is called "centre of descent," determining one's age limit or chances of marriage, inheritances and again diseases, also the constitution of the fingers, of the bladder and again of the feet. Here "life abroad" is determined.

(The various repetitions show that the scheme has been composed by sub-dividing an older simpler diagram.) The eighth sector is again "the inactive one"—as the second or the "descent opposite" (*Antidyis*) of the horoskopos. The ninth sector belongs to the Sun god and is called *Theós*, the "God" who reveals everything connected with the gods, religious cults, dreams, travels and "relations to the ruler" are also decided here. This sector too is called "intermundane space" because the sun as well as the moon were supposed to convey souls from the upper to the lower world and *vice versa*. The tenth sector is "Mid Heaven". It announces adolescence, vocation, marriage, children, as well as the character of the parents. The eleventh sector is called *Agathodaimōn*, "the good demon" or *epanaphora* of Mid-Heaven ("what rises towards Mid Heaven"). This determines the third of the 'seven ages of man,' vocation (again!), patrons, the power and authority of an official and the flower of youth. The twelfth sector—*proanaphorá* ("preceding the rise") of the horoskopos—or "intermundane space" determines the pre-natal fate of the child and the mother. Here Saturn dominates.

You must not ask why all this should be so. You would not get any rational explanation—since there is obviously none—but only be referred to the authority of the alleged revealer of the *Oktotopos*, the old Egyptian Asclepius (below, p. 194) or the equally doubtful authority of *Hermes Trismegistus* (below, p. 194) for the system of the "twelve places". But while you are expected to take this disorderly and irrational system as divine truth, the historian finds that the ancient Greek astrologers did not feel any qualms in modifying it. Protagoras

(middle of the third century B C) was the first to revise it, other modifications are found in the second century B C Græco-Egyptian handbook ascribed by Greek forgers to King Nechepso (below, p 192 f) and the high priest Petosiris (below, p 193), in Serapion, Manilius and many other authors. There was, originally, no unanimity either in the division or in the names of the sectors.

The system applied by the Arabic, the medieval Latin, and therefore by the modern astrologers, is derived from the great handbook of Firmicus Maternus (fourth century A D). It is easily remembered by means of the Latin distich

*'Vita, lucrum, fratres, genitor, nati, valetudo,
Uxor, mors, pietas, regnum, benefactaque, carcer.'*
I II III IV V VI
(Life, business, brothers, father, sons, and health,
Wife, death, religion, reign, good deeds, and jail)
VII VIII IX X XI XII

The verses can be illustrated approximately by a diagram "squaring the circle" for the benefit of the poor in spirit who do not know how to use or have not got a pair of compasses.

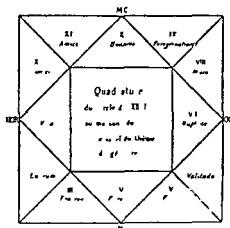


Fig 4a

Our whole life is adumbrated in the first place, the second shows how we shall at some time earn our living, the third and fourth what brothers and parents we are to have—*i.e.*, into what kind of family we are about to be born.

(Since the parents are already alive at the moment of birth and the body of the child is already fully developed, this means that the "constellation" decides into what ready made

body and family & soul descending from the heavenly spheres—below, p 65 f—is sentenced by destiny to enter) The fate and quality of the future children of the new born, his health, his wife and his ultimate death can be read in the fifth, sixth, seventh and eighth “places” In the ninth place & man’s religion, in the tenth his vocation, in the eleventh his lucky and in the twelfth his unlucky experiences are pre determined Sometimes this “wheel of fate” (*rota fortunæ*) or “circle of generation” (*κύκλος γενέσεως, trochos γενέσεως, rota natalitatis* Epistle of James III 6) is not simply inscribed with names and Roman figures, but also adorned with pictorial symbols intended for the illiterate—e g, the image of & confined woman in the first, a figure of death (a skeleton, etc) in the eighth, a king or crown in the tenth, & prisoner in chains in the twelfth sector (pl IV)

VI

THE “FOUR CORNERS OF THE WORLD” AND THE EIGHTFOLD DIVISION OF THE CELESTIAL PLANISPHERE THE HORIZON AND THE ASTRAL COMPASS CARD OF TROPICAL NAVIGATION

THE real origin of the curious reference scheme discussed in the preceding chapter is not difficult to understand It was invented in sub-tropical regions where the north pole of the celestial equator stood so near the horizon that the “*Antimesourânēma*” or “*Imum Medium Cælum*, the Lower Mid heaven, simply marked the North point of the terrestrial horizon, immediately “below mid heaven” The opposite point in the South—above which the sun stood at midday—is the cross-section of meridian and horizon The “ascendent” or “*horoskopos*” is the east point at which the equinoctial sun rises, and the “descendent” the point at which it sets The four “centres” (*kentra*), “pillars,” “door posts” or “corners of the world” (*cardines mundi*) are originally quarterings of the horizon

The further division into eight parts corresponds to the very old distinction of North West, North East, South West and South East on the earliest compass-card of the ancient navigator

It so happened that in the third millennium B C the celestial sphere was almost exactly quartered by two big circles running

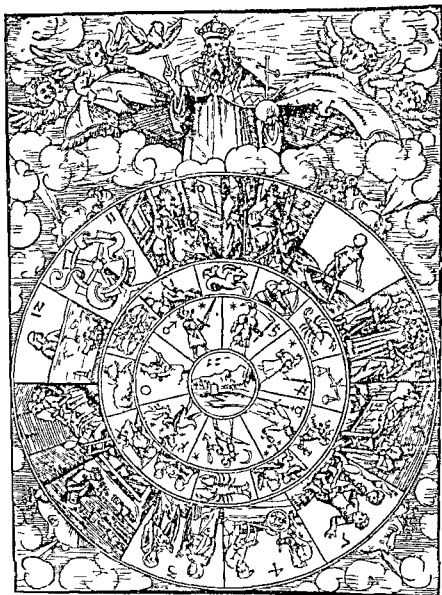


PLATE IV

God as the Prime Mover, The Twelve Houses of Heaven, the Four Winds, the zodiacal signs and the seven planets moving around the earth. Woodcut by Erhard Schoen in Reymann's *Nativitätskalender* of 1515 (after A Warburg, *Gesammelte Schriften* vol II pl LXXV, fig 130). Courtesy of the Warburg Institute University of London

the one through the pole-star *Alpha Draconis* and the most brilliant "fixed star" *Spica* in *Virgo*, and the other through *Alpha Draconis* and the almost equally luminous Dog-star

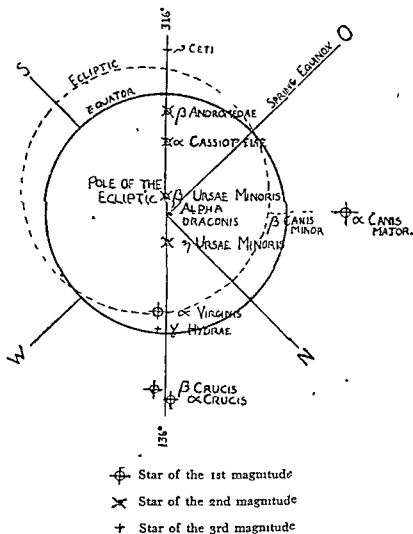


Fig 5

(*Sirius*), the circles connecting the solstitial and the equinoctial points dividing these quarters into almost exactly equal sectors (fig. 5).

The star rising in the East at a certain hour is called in Greek the star of the *hōroskopos*, "hour-pointer" or "hour-observer," because the Egyptian and Babylonian astronomers

used a selected series of luminous stars as pointers of their star-clock on clear nights (figs 13, 17, pp 79 86) long before water clocks (*clepsydræ*) were used for this purpose

There was a time when primitive men believed that a star was just "born" at the moment it rose or appeared on the horizon—even a Greek philosopher of such rank as Heraclitus (sixth century b c) still believed that a new sun was born and died every day. At that stage of evolution the new born child might well be considered as sharing certain qualities with the new born star, entering life at the same "hour". Says Pliny "A great and rich man has a big and bright, a poor and obscure fellow a small and dim star". On the other hand, primitive men sometimes imagined that a star falling from heaven entered as a spark of life giving fire into the body of a new born child—a belief which is the natural counterpart of the idea (below, pp 55 ff) that the departed soul of a dead man becomes a star and lives on in heaven. If a "falling" or "shooting star" could be believed to enter a new born child's body—it might be the soul of an ancestor which had departed to heaven and dwelt there as a star for a time—the same could be believed of a star setting or disappearing from heaven below the western horizon just when the child was born. This would lead to an identification of the child's soul with the star just setting. Equally natural for the primitive mind thinking in terms of loose associations of ideas and not in logical conclusions from observed facts, would be the assumption that the star "dying" or "disappearing" from the world at the "hour" of the child's birth might indicate in some way the circumstances of the child's future death.

In the tropical regions where the stars rise nearly vertically, the star in "mid heaven" would stand over the head of the mother and the new born child, as if it were watching over them from heaven, as the "star of Bethlehem" is shown in many a "Nativity of the Christ". That would be considered a good reason for looking up and finding out which star was thus "guarding" the child.

Another plausible theory would be to assume that the star "looking at the hour" for the first time of his celestial life and career would "indicate" the child's circumstances at the time of birth—a brilliant asterism, fixed star or planet, in the "ascendent" would be believed to herald the birth of a prince or otherwise prominent man, like the star of Bethlehem in St Matthew's Gospel. If the "descending" or "dying" star

was supposed to forecast the future death of the child, the star in mid heaven would, for this primitive associative "logic," correspond to the "middy" or adult life of the infant

Naturally, the stars in between these main points would be thought to correspond to the sections of life between early youth and the culmination of life, or between the culmination and the final decline and death

With each of these periods typical relations with the environment would seem to be connected. There is an age when a man begins to earn his living, to embrace a vocation, to take office or marry a wife, to beget children, to lose his parents, etc

Obviously there must be a large element of arbitrariness and free fancy in the elaboration of the system. The more subdivisions, the more arbitrary the correlation must become. Evidently, the *Oktotropos* is less "rational" than the system of the "four centres" or "pillars" (*quattuor cardines*). The system of twelve cusps must be still more arbitrary, first of all because it has no longer anything to do with any divisions of the horizon—which proceed from four quarters to eight eighths, sixteen sixteenths, and finally the thirty two rhumbs of our compass-card—but rests originally on the division of the day into twelve hours of variable seasonal length—the so-called "Babylonian hours," first encountered on a small ivory fragment inscribed with cuneiform characters in the British Museum

The criticism of Ptolemy against this system of twelve places directed against the assumption that the stars below the horizon, the rays of which would have to penetrate the earth in order to reach the new born babe, can influence it—has no bearing upon the original system, referring the various observed stars and positions to a dial (fig 16) of some sort dividing the night into twelve equal hours of a length varying with the seasons, as the ancient Egyptians and Babylonians did. As soon as this twelve fold partition of the nocturnal arc of the stars in question was confused—probably by the ignorance of the Greeks of the Hellenistic period writing in the name of Hermes Trismegistus—with the *Dodekahōros* of the Babylonians (below, p 82), the division of a whole sidereal day of twenty four equinoctial hours into twelve *beru*, each equal to two equinoctial hours, the *prima facie* absurd inclusion of the constellations below the horizon into the "nativity" would follow automatically, without, of course, disturbing the logic of our "occultist" astrologers who could never make up their minds whether or not the "influence" exerted by the stars on men,

methods a system based originally on a wholly irrational and illusory cosmology. Suffice it to say that these efforts could never succeed in making sense out of original nonsense: the term "quadrant" was still employed after astronomers like Geminus and Demophilus had explained that the meridian divides into equal halves only the "square" of the tropical points at the time when the equinoctial points coincide with the (theoretical) horizon. For every other position the zodiac is divided into "unequal quarters" varying from 60 to 120 degrees. Zodiacal signs (below, pp. 89 ff.) were therefore divided into such as "increased" the oriental quadrant, and were for this reason called "commanding signs" (*prostássonta*, lit. "adding to"), and such as increased the occidental quadrant, and were therefore called "obedient" signs (*hypakoúonta*). In certain nativity diagrams surviving on Græco-Egyptian papyri in the British Museum, the *hōroskōpos* or "ascendent" is placed in the twenty-fifth degree of *Cancer*, mid-heaven in $10^{\circ} 30'$ of *Aries*, which gives $104^{\circ} 30'$ for the eastern quadrant; in another—the horoscope of one Anubion—the "ascendent" is in the twenty-fifth degree of the Archer, mid-heaven in the eighth degree of *Virgo*, the oriental quadrant being 77 degrees.

A similarly asymmetric division can be seen on a horoscope of Greta Garbo in Rupert Gleadow's recent book *Astrology of Everyday Life*. Those who know the very elements of positional astronomy will be amused to read how an "M.A. (Oxon.)"—a graduate of Trinity College (1932), who studied Egyptian and Coptic under Griffith—explains this property of the diagram. It is apparently as true in 1941 as it was in 1906, when the anonymous author of the article "*Astrology*" in the Harmsworth *Encyclopædia* wrote that "It would seem that astrologers are without the mathematical ability required to erect their 'houses' on a secure foundation, for even a little knowledge of the geometry of the sphere reduces the haphazard division of 'houses' published in astrological tables to an utter absurdity."

But there is an even graver objection to the whole practice of basing astrological forecasts on this twelve-fold division of the assumed immobile ninth sphere. It is the lamentable fact—all unknown to the modern charlatans practising the "royal art"—that the division of the sky into twelve "houses" or "places" can be effected in four different ways, the one as good or as bad as the other.

The present method of dividing the sky into "twelve houses"

was first explained in a popular way by Father Gregor Reisch, the Carthusian abbot who criticised judicial astrology in his *Margarita Philosophica* (A.D. 1493).



Fig 6

Readers conversant with Latin will enjoy his exposition of the star-gazers' claim to derive their knowledge of the properties of these sectors from the age-long experience accumulated since Adam and Abraham who taught the Egyptians what he had

learned from the Chaldæans. The truth is that the modern system of dividing the sky by six great circles intersecting at the pole of the equator and dividing the equatorial circle—not the horizon or the ecliptic—into twelve equal segments was first introduced by the great astronomer Johannes Regiomontanus (fig 2) in 1440.

There are three older, essentially different methods: the "Chaldeans" and Firmicus Maternus quoting them divided not the equator but the ecliptic by six great circles intersecting in the pole of the ecliptic, a division that can be seen on the Arabic star map fig 6. Arabic astrologers like 'Abd al 'Aziz divided the eastern half of the diurnal arc of the Ascendant, plus the eastern half of the nocturnal arc of it, each into three equal parts and drew six great circles (hour circles) through the dividing point. The fourth method, introduced by Campanus (c 1030 AD) divides the prime vertical running through the North point of the horizon into twelve equal parts.

The position of the various planets in one of the twelve "Houses" depends, of course, entirely on the method of division chosen. Since this method was changed three times in the course of history it is manifestly absurd to say that the particular effects of the twelve sectors of the "ninth sphere" on the fate of the new-born have been ascertained by the experience of "thousands" of years.

If the modern method introduced towards the middle of the 15th century is the right one, the others previously used must have yielded wrong "empirical" results and the "experience" underlying the practice of our present star gazers embraces not more than five hundred years or about seventeen generations.

VII

THE SIGNS OF THE ZODIAC AND ALL OTHER
"CONSTELLATIONS"—MERE SUBJECTIVE
CONFIGURATIONS

"Is there a planet that by birth
Does not derive its home from earth,
And therefore probably must know
What is and has been done below?
Who made the Balance or whence came
The Bull, the Lion and the Ram?
Did we not here the Argo rig,
Make Berenice's perwig?
Whose livery does the Coachman wear,
Or who made Cassiopeia's chair?
And therefore, as they came from thence
With us may hold intelligence"

SAMUEL BUTLER,
"*Hudibras*," Part II (1664), Canto III.

Not only is the "zodiacal belt" a wholly imaginary entity—a mere geometrical system of reference, based on a projection of the merely apparent orbit of the sun on to the purely ideal "sphere" of the fixed stars—but the very "constellations" of the stars, seen as contained within this belt, are purely subjective imaginings based on the optical perspective of the terrestrial observer.

The gentleman with the big cigar drawing the diagram seen in pl II imagines "the zodiac" inhabited by figures best remembered by means of an old English memorial verse:

"The Ram, the Bull, the Heavenly Twins,
And next the Crab the Lion's shins,
The Virgin and the Scales,
The Scorpion, Archer and Sea-Goat,
The Man that bears the Watering-Pot,
The Fishes' glittering tails"

(Curiously enough, these shining "tails" of the Fishes are a literal translation of the otherwise long forgotten Babylonian name *zibbatî*, "the tails" of this constellation (below, p 107), not otherwise encountered in Greek, Latin or Arabic star-lore.)

Anianus, the author of the *Computus Manualis*, a school-book of astronomy in terrible Latin verses, printed at Strassburg in 1488, taught that these twelve signs

*Sunt Ariés, Taurús, Gemini, Cancér, Leo, Vírgo,
Libraque, Scórpius, Arcitenéns, Capér, Amphora, Pisces.*

But the truth is that nowhere in the sky is there any ram, bull, crab or scorpion or sea goat, any more than a virgin holding scales or a man with a watering pot

The stars which appear to the terrestrial observer to lie in one plane and to outline somehow the shape of a scorpion are situated many light years distant from each other in depth, and would show a wholly different outline if seen from any other point in space, just like a certain mountain top which looks very much like the head of a sheep from one point of view and not at all like it from all others. Even from the point of view of the terrestrial observer it would by no means be difficult to connect these stars in many other ways than so as to form a scorpion's outline, as anybody can see who cares to look at a modern star map which does not show the traditional wholly "fantastic" animal contour, but only what the astronomer calls "alignments" (fig 18, third ring counted from the rim)

Everybody knows that the familiar constellation *Ursa Major* is called the "Great Bear" (*Arktos*) (fig 6). Arcadian seafarers who colonised Rhodes and Cyprus wanted to identify the northern stars guiding the ancient navigators with their own tribal badge while Thales of Miletus (seventh century B.C.) called these same stars, following the Phœnician, *ie*, Babylonian habit, "the Wain"

This Milesian interpretation of the stars of *Ursa Major*, as a waggon drawn by horses is equally found in ancient Chinese monuments. But the Egyptians called the same constellation "the Bull's Haunch" (*hopesh*) or "the Adze" (*meshetyw*). The Hebrew author of Job ix, 9 knows the Egyptian name "Bull's foreleg" and translates it *kasal* (*kesal* of the Authorised Version) "the Haunch". Some Latins and, following them, some English humanists called it *Temo*, "the Plough," the Americans naming it still more prosaically "the Dipper," a comparison borrowed from the Red Indians. Most obviously the group is neither a "Bear"—no bear has such a long tail—nor a "Long Waggon" nor a "Bull's Foreleg" nor a "Plough" nor a "Dipper," all these names being mere metaphors designed to help the skipper or wanderer to recognise and remember them.

Of course, these images were not originally arbitrarily and artificially devised in cold blood by playful astronomers, like some of the most modern constellations—such as *Antlia*, the "Pneumatic Pump," *Musca*, "the Fly," etc.

Owing to the particular course which the evolution of our Western civilisation has taken our sky map (figs. 7 and 8) shows



Fig 7



Fig 8

that decidedly Hellenistic character which has been so well brought out in one of Sir James Jean's wireless talks on "*The Stars in their Courses*"—since published as a charming book

"Some of the constellations," said the famous Cambridge astronomer, "still bear the names of mythical Greek heroes and of objects occurring in Greek legends. In some cases a group of several constellations near together gives a sort of pictorial representation of a legend, the sky seems to have been utilised as a sort of permanent picture book, and made to illustrate story after story of ancient mythology as the earth turned round under it

For instance, six constellations near together in the sky—*Cepheus*, *Cassiopeia*, *Andromeda*, *Perseus*, *Pegasus*, the winged horse and *Cetus* (the sea monster or *Leviathan*)—illustrate the legend of *Perseus* and *Andromeda*. With the help of a description by Aratus of Soli, a minor Greek poet of the third century B C, we may visualise the scene (fig 7) somewhat as follows

Andromeda is chained by her outstretched arms to a rock in the sea. Her parents *Cepheus* and *Cassiopeia* look on from near by, but must not help her. *Cepheus* has himself chained his daughter to the rocks to placate the angry gods, while *Cassiopeia*, whose indiscreet boasting as to her daughter's beauty had caused all the trouble, remains "seated in her stately chair" (a bright W of stars). As they impotently watch, *Cetus*, a sea monster (fig 8) or *Leviathan*, sent by the gods themselves, approaches *Andromeda* to devour her. Suddenly *Perseus* appears, riding the flying horse *Pegasus*. He has just killed *Medusa*, the *Gorgon*, whose glance turned everything to stone, he still carries her head—the star *Algol*, Arabic "the ghoul", in his hand. Dismounting in great haste, and licking up a cloud of dust (a crowd of very faint stars) in so doing, he presents the *Medusa's* head to the monster *Cetus*, thereby turning it to stone, and then rescues *Andromeda* by cutting her chains. Meanwhile the horse *Pegasus* is falling over backwards into a second group of constellations, all of which bear aquatic names. Besides *Cetus*, the sea monster, are other fishes—*Pisces* (the Fishes) and *Piscis Australis* (the Southern Fish)—also a waterman (*Aquarius*), and the river *Eridanus*. Aratus says that the Waterman has already seized *Pegasus* by the mane. (This is the reason why Teukros of Babylon calls this figure "the horse tamer" *Hippokrator*)

"We shall find this group of constellations in the evening sky late in the autumn. As it sets in the west another great group appears from the east—*Orion*, *Canis Major* (the Great Dog), *Canis Minor* (the Little Dog), *Lepus* (the Hare), *Monoceros* (the Unicorn) and *Taurus* (the Bull). These show us *Orion*, "the mighty hunter," wearing a dazzling belt (three bright stars in line), surrounded by his dogs and animals for the chase.

It has been suggested that yet another great group of constellations may represent some form or another of the widespread legend of the deluge, they are *Argo* (the Ship or Ark), *Columba* (the Dove), *Corvus* (the Raven), *Lepus* (the Hare), *Hydra* (the Water snake) and *Crater* (the Cup). But another interpretation—set forth at great length by Sir Isaac Newton—is preferable. For *Argo* was the name of the ship in which the hero *Iasōn* led his sailors, the Argonauts, on their fruitless search for the golden fleece, and the Greeks had a legend that when, after many adventures, they failed to find this, the goddess *Athene* changed the whole band of adventurers into stars, which now form the constellation *Argo*.

While most of the constellations are associated with myths and legends, one at least is associated with an historical figure. Berenice, the wife of Ptolemy III, King of Egypt, was famed for the beauty of her hair. When her husband undertook a dangerous expedition to Syria, she made a vow that if he returned in safety, she would cut off her hair and place it in the Temple of Arsinoë. In due course he returned and the queen faithfully kept her vow, she cut off her hair, and handed it to the priest in charge of the temple. As this was before bobbed hair had become fashionable, the king was exceedingly angry. To smooth matters over, the wily priest explained that the hair had already been deposited in the heavens, where its beauty would be seen by all men for ever, he pointed to a group of stars which certainly look somewhat like hair, and have been known as *Coma Berenices* (Berenice's Hair) ever since. So if you want to see how beautiful the tresses of the Egyptian queen were, you need only look up at the sky any spring evening, at no great distance from the "Plough" or "Great Bear," and there they are still shining in all their glory."

I have purposely reproduced this charming bit of graceful light hearted banter, because it shows at a glance how perfectly arbitrarily, indeed playfully the artistic imagination of Greek

art and poetry has disported its whims and fancies on the sphere of the "fixed stars"

But it would be very misleading to make the reader believe that all these images and the earlier Oriental ones of what the Greeks called the *Sphæra Barbarica* behind them were originally created in the same irrelevant and playful mood in which the modern astronomer contemplates them on an old star map. The all important rôle which these images play in the speculations of the ancient and modern astrologist could not be understood, if this were the case.

If Sir James Jeans really thought that "after we had seen the sky for a few nights we should discover that the same ordered arrangement persisted night after night," he is taking a very optimistic view indeed of mankind's average intelligence. To this day the majority of our contemporaries are quite incapable of discovering anything of the sort and would willingly believe it, if he told them so, that some of the constellations wax and wane or gradually move about or are otherwise distorted in the course of the seasons.

Although most people know such constellations as "Orion" and "Charles's Wain," not one in a thousand could show the present pole star, let alone could have discovered unaided and alone its immobility.

It is quite certain that, for the primitives who evolved such ideas about the sky as the "star studded dome of heaven," the "celestial canopy" or "God's living garment" embroidered with the constellations, the stars were "a mere random collection of points of light," just as the spots dotting a leopard's skin or the bright flowers enlivening a meadow in springtime to which they have so often been compared. We may be sure that the permanent position of the "fixed stars" in relation to the apparent "dome" of heaven was only gradually discovered as the result of long patient observation by the few individuals who acted as seers and magicians in the primitive society of these far distant times and that the "mapping out of the sky" enabling the observer to identify all the various groups of stars by their shape must have preceded this discovery.

The process known as "Astro-gnosis" which led to this most important achievement of human imagination is best illustrated by a quotation from Leonardo da Vinci's Book on Painting, where that great artist and scientist says

"When you look at a wall spotted with stains or with a variety of stones, if you were to devise some scene, you may discover a resemblance to various landscapes beautiful with mountains, rivers, rocks, trees, plains, wide valleys and hills in various arrangement, or again you may see battles and figures in action or strange faces and costumes and an endless variety of objects which you could reduce to complete and well drawn forms. And these will appear in between (*interviene*) (the spots of) such a wall mixed (into them) as the sounds of bells in whose jangle you may find any name or word you choose to imagine"

What Leonardo describes may not happen when you look at a stained wall, for you may not happen to be an "imaginative" or "fanciful" person, hearing voices in the sound of bells as Joan of Arc and Leonardo certainly did. But some people are so "fascinated" by looking at a random, irregular, apparently senseless pattern or, for the matter of that, by staring for any length of time into an ink-well or into a crystal sphere (plate I) that their normal attention is "dispersed" or unloosened and a flow of freely associated memory images, a kind of day dream, is started. The "rapture" is increased if the darkness of the black mirror in the ink well is combined with a dazzling splendour, such as the light reflected from a crystal or from a diamond. Indeed, the contemplating subject may fall into what is called a "trance," a "sober drunkenness," as the ancient mystics described the state of the soul induced by the contemplation of the splendid pattern of variously coloured glittering points of light on the velvety black or deep blue of the heavenly sphere.

In his oration about "the Royal Sun God," the Emperor Julian the Apostate says

"When I encountered by night a cloudless, serene sky, I neglected everything else and sank my mind completely into the celestial beauties. Then I would not listen any more when somebody said something to me, and I was hardly conscious of what I was doing myself. I was considered a star gazer even before my beard began to sprout"

VIII

THE SOULS OF THE DEAD SEEN AMONG
THE STARS

MEMORY IMAGES floating to the surface and projected into the unknown while the mind is in the "phantasmagoric" state described by Julian the Apostate are endowed with an almost hallucinatory intensity because they are "mixed up," as Leonardo da Vinci says, with the sensorial perception of the random pattern which they seem to complete and to interpret. The contents of these "illusions" completing sense impressions are determined, just as are the contents of our nocturnal dreams, by our subconscious wishes and fears.

The enraptured star gazer may see in heaven the outline of a beloved departed mother, father or sweetheart.

When Emperor Hadrian's favourite Antinous was drowned in the Nile, the bereaved lover said he could see a new star in the sky and recognise him as Antinous.

Equally so the images of all those who were remembered for good or bad deeds with affection and admiration or with hatred and haunting fear must have occasionally appeared to the primitive star gazer in the pattern of the stars.

In a Latin funerary epigram the bereaved husband perceives that his departed bride lives now among the stars in the immediate neighbourhood of the Wreath (*Corona*) where she can look at the nymph *Helikē*, dwelling in *Ursa Maior* and on *fur Andromeda*.

This is how the otherwise inexplicable idea seems to have arisen among many primitive people that the "souls" of the dead—or at least of those among them who are remembered by those left behind for what they have done to them or for them—dwell among the stars. It is different from the belief that the "souls" in general rise to heaven in the clouds of smoke surging from the funeral pyre which is found among races cremating their dead, originally in order to destroy the bodies completely and thus to prevent them from coming to life again and troubling the living as "revenants." The widespread belief in a blissful cloud cuckoo land in heaven as the final abode of the departed "souls" is based on the "phantas-

magoric" interpretation not of the fascinating pattern of the stars, but of the varying cloud shapes massed on an overcast sky and watched by pre-historic Hamlets and Poloniuses

The belief that "all the stars were once men" and that all living men will once be stars is widely spread among primitive mankind the Greenland Esquimaux point to heaven and say "up there are all the former men and animals" American Indians believe that whole tribes go to heaven and are transformed into stars, just as the apocryphal "*Ascension of Moses*"—written shortly after 4 B C—promises to the suffering people of Israel that they will soon be carried to heaven on the wings of the Eagle (*Aquila*) and that God will let them be suspended there as stars

The presence of animals among the stars is the natural consequence of the belief that the departed souls chase them, catch them and feed upon them in the "heavenly hunting grounds" as they did on earth during their life time Weapons for hunting and warfare, implements of agriculture, thrones and houses and towers, rivers and seas and boats must be found there simply because the men transferred to this star-world are seen there in the seers' imagination acting as they did when he knew them on earth The "beautiful landscapes with mountains, rivers, trees, fights and figures in action" which Leonardo da Vinci could see in the dull stains and patches on the mortar of dilapidated and discoloured walls, were seen with the same clarity by the enraptured ancient star gazer in the gold, silver, ruby and diamond on sapphire pattern of the subtropical sky ecstatically contemplated through the dry atmosphere of a Greek, Egyptian, Syrian or Mesopotamian summer night

Ancient Oriental imagination saw, as the modern poet, "the stars" as "golden fruit upon a tree, all out of reach" (George Eliot), believed—with Erasmus Darwin—that the "flowers of the sky," they "too to age must yield fruit as" their "silken sisters of the field", it believed that "silently one by one, in the infinite meadows of heaven, blossomed the lovely stars, the forget me nots of the angels" (Longfellow) and that "stars are the daisies that begem the blue fields of the sky, beheld by all and everywhere, Bright prototypes on high" (David Macbeth Moir)

Pindar, or for the matter of that, a Greek poet of Alexandria might have described the Elysian fields, abode of the god Kronos ruling over the heroes of the primeval Golden and Silver age, in the words of Walter de la Mare

tablet containing the story is unfortunately broken off, but it seems that both the eagle and the hero were transformed into constellations—the Eagle became *Aquila cadens*—in Arabic *el nesr el waki* whence our star name *Vega* for *Alpha Lyra*—and Etana, fallen to death became “the corpse” (in Babylonian *pagru*), later on identified with the body of *Antinous* by the astrologer Ptolemy of Alexandria wanting to flatter and console the infatuated Emperor Hadrian over the fate of his beloved slave drowned in the Nile under mysterious circumstances.

The legend of Etana was known to the Greeks. Aelian, the well known collector of strange stories referring to animals, attributes the adventure to one *Gilgames*—evidently the hero of the famous Babylonian *Gilgamesh* epic. It was imitated by those who invented the myth of Ganymede, the play boy and cup-bearer of Zeus—identified with *Aquarius* and his urn—being carried into heaven by the god’s eagle (our *Aquila*) and by the novelists who told romantic tales about Alexander the Great and invented the legend of his ascension to heaven on the back of an eagle or in a chariot drawn by eagles—a story, which, later on, the Jews told of their own fantastically idealised King Solomon. The large cameo of Paris called “The Apotheosis of Augustus” shows a prince of his house, probably Germanicus—who wrote a book on the constellations like the Babylonian *Adapa*—born to heaven on a winged steed. Sometimes a griffin is preferred for this purpose to the astral Pegasus. Augustus and Hadrian are shown carried up to the sky in the car of Helios, just as the prophet Elijah is believed to have been lifted up in the fiery chariot drawn by the horses of the Sun. A fourth century diptych in Florence shows the Roman emperor Constantius Chlorus carried by winged demons up to heaven which opens at the sign of the “Balance.” According to Germanicus, Augustus was carried back to the stars on the back of *Capricornus*, the zodiacal sign which stood in the ascendent when he was born.

At the funeral rites of the Roman emperors there was always an eagle concealed and lightly fastened on the top of the pyre so that it would fly away as soon as the fire had singed its fetters. This bird was supposed to bear aloft the departed ruler’s soul and ancient art frequently represents the busts of the Cæsars resting on an eagle in the act of taking flight. A witness of senatorial rank—who got a statutory fee for this solemn perjury—used to swear an oath that he had actually seen the august soul wafted up to heaven.

In a wonderful discourse about "the Kingdom within you," preserved in a Greek papyrus found in Egypt, Jesus asks his audience of Pharisees who believed that the souls of the just ones would be transferred to heaven, to the Islands of the Blessed overseas or to a blissful life underground:

"If the Kingdom were in heaven, would the birds carry you thither? or if it were beyond the sea, would the fishes bring you there? or if it were underground, would the creeping things of the earth guide you to it?"

In spite of this memorable and authoritative rebuke simple Christian folk believe to this day that their souls will go up to heaven and that "God makes a new star whenever a child dies." Brothers and sisters of a deceased infant are shown a star and told: "up there in heaven shines your dead brother." Maxim Gorki quotes in one of his novels a girl's epitaph in a Russian cemetery as saying: "the earth has lost a flower, heaven has gained a star." Pope Gregory the Great tries to prove from the text of the Gospels that the stars are the souls of certain men who excelled through their virtues. St. Augustin says in the twelfth book of his "*City of God*": "The wise"—in his source that means those initiated into the Pythagorean mysteries—"are after their death carried up to the stars, everyone to find his rest in a constellation congenial to himself" (*in astro sibi congruo*). Thus the Cynic philosopher Diogenes is said in a Greek epigram to dwell now in the constellation *Kyōn* (*Canis maior*). An astrological picture-book of the good King Wenceslas of Bohemia in the Vienna National Library adds to the figure representing the Milky Way "*in ea parte regnant collegia spirituum sapientissimorum*," "in this part rule the assemblies of the wisest spirits." A Roman funerary bas-relief of the Flavian age in the Berlin Antiquarium shows the three Graces—which the Hellenistic *Sphæra Barbarica* of the astrologer Teukros of Babylon identifies with the three brilliant stars in "the belt of Orion"—and the seated figure of a girl who has, as the inscription says, gone "to her sisters as the fourth" *AD SORORES III(a)*—"the fourth of the Graces," the fourth star in the belt of Orion, now known as *Thêta Orionis*.

According to the Stoic philosopher Chrysippus "the souls of brave men are believed to float about in the air after the manner of stars and thus to achieve immortality." "In the tranquillity of those upper regions," says the Cambridge Platonist Henry More in his treatise on the "*Immortality of the Soul*" (III 9, 8)

"the spirit of Nature may silently send forth whole gardens and orchards of most delectable fruits and flowers, of an equilibrated ponderosity to the part of the air they grow in, to whose shape and colours the transparency of these plants may add particular lustre as we see it is in precious stones" The same description of the Oriental, so-called "Barbaric Sphere" of heaven known to the Greeks of Egypt which saw the "Three Graces" in the three stars of the "Belt of Orion," perceived a "vineyard" (*chōnon tōn ampélōn*) in the neighbourhood of Capricorn, opposite the star "Early Vintager" (*Provindemiator*), figured as the infant Dionysos holding a grape carried on the arm of *Virgo*. This celestial Paradise or "pleasure garden" is meant when we see in the so-called "Crypt of the Stars" in the Christian catacombs of S. Pietro e Marcellino the souls of the departed standing in an attitude of prayer in a flowery garden between the stars and the sickle of the New Moon.

Greek cosmology explained the golden apples in the garden of the Hesperides, the fair daughters of the Western evening sky, as the stars which disappear when the sun rises and are therefore said to be plucked by Herakles. The sun god himself was believed to have a garden yielding never withering fruit. The book *Zohar*, the Bible of Jewish mysticism, describes a celestial apple garden the white shimmering fruit of which gives life to the three hundred and sixty worlds, probably derived from the allegoric interpretation of the "Song of Solomon" (II 3, 5, IV 16, V 1, VI 1, 2).

Ideas similar to those of Chrysippus are still defended in the 17th century by the great French mathematician and political philosopher Jean Bodin (Bodinus). One generation before Bodinus Shakespeare's Juliet was heard to pray "gentle, loving, black browed Night" to give her Romeo and

when he shall die, take him and cut him out in little stars
and he will make the face of heaven so fine
that all the world will be in love with night

The girl's naïve idea is derived from the popular belief, that a new sun is born every morning, the old one being cut up into stars every evening by the angels.

According to Milton's "Paradise Lost"

' Those argent fields more likely habitants
Translated saints or middle spirits hold
Betwixt the angelic and the human kind

Even so, for Wordsworth

The stars are mansions built by Nature's hand
And haply there the spirit of the blest
Dwell clothed in radiance, their immortal vest

The theory of the soul surviving among the stars was taught in the pagan mystery religions. Hermes Trismegistos tells the initiate that man can ascend into heaven. In the so-called *Mithraic Liturgy*—a Greek magical papyrus in the Paris National Library—the initiate soaring to heaven says to the stars threatening him “a star am I myself among stars, perambulating my orbit with you and shining forth from the depth.” The initiate in the Orphic Mysteries hopes to fall, in the shape of one of the shooting stars called “kids” (*enphoi*) into the Milky Way and stay there for ever, instead of being reborn again and again in the “weary cycle” of generations, still mentioned in the Epistle attributed to St. James (iii, 6 “wheel of generation,” mistranslated “course of nature” in the Authorised Version).

The transformation of the human being into a celestial constellation is effected by divesting the soul of its body as of a garment and by clothing it into a starry cloak of light.

Then all this earthly grossness quit
Attired with stars we shall for ever sit
Triumphing over Death and Chance and thee, o Time
MILTON

The transformation of a departing hero into a star—the so-called *cat asterismus*—is described in a manner which will seem familiar to those who have read the transfiguration (*metamorphōsis*) and “Ascension” chapters in their New Testament and who remember the numerous paintings illustrating them: the face slowly begins to shine from within, the clothes become luminous, the light spreads over the whole figure. Then suddenly a gradual levitation sets in and the soaring goes on until the ascending figure is not seen any more but as a far distant shining point of light—a new star.

In his “*Dream of Scipio*,” Cicero tells us that the “True Romans” will live on for ever among the stars of heaven. The great heroes of the past are supposed to live now in the Milky Way.

A little later the poet Manilius writes (vv. 799 ss. cp. pl. iii and fig. 46)

*Altius ætheris quam candet circulus orbis
 Illa deis sedes Hæc illis proxima divum
 Qui virtute sua similes vestigia tangunt*

Higher up still than the milky white circle of ether
 Sparkles enthroned are the gods but next to them heroes are dwelling
 Godlike, following in their steps by dint of their virtues

In ancient Christian epitaphs the hope that the sainted souls will survive in the Galaxy is several times expressed quite clearly

The comet appearing in 44 B.C. after Julius Cæsar had been murdered was believed to be "the star of Cæsar" (*sidus Julium*), the soul of the great emperor soaring to heaven. Vergil meant quite literally what he said when he asked the strange question whether Octavian Augustus would in the future take his place among the signs of the Zodiac (below, p. 100 f.), perhaps at the place where there would be room for him between the sign of the Virgin and the Scorpion which already retracts his claws to make place for "Cæsar holding the scales" of Justice.

Augustus is actually described in an epigram of Asclepiadus as the holder of the heavenly Balance. Claudianus, one of the last great Roman poets describes the emperor Theodosius as carried in a shining orbit through the clouds and the planetary spheres to the highest heaven. Charlemagne was believed to ride in what already the Saxon "*Manual of Astronomy*" (c. 1000 A.D.) calls "Charles's Wain."

Ancient Greek epitaphs proclaim the same faith as the Russian one quoted by Maxim Gorki (above, p. 59)

'Mother, cry not!' "What good are thy tears? rather
 worship me and wonder for a star have I become, a divine
 one on the evening sky"

says a youth of twenty on a grave stone from the Greek island Amorgos. On another, an eight year old is addressed in these words "Thou wast allowed to see heaven and shinest now with the stars. Thou risest beside the horn of the Olenian she goat" (i.e., *Capella* in *Auriga*) "Shine now to the boys in the play ground as a helper, since the gods gave thee this favour."

The earliest mention of this belief in a survival of the dead among the stars is found in Aristophanes' comedy "Peace" played in Athens 421 B.C. An old peasant, Master Harvester (*Trygaios*) by name, rides on a gigantic dung beetle into heaven. When he returns he is asked by his farm hand whether he has seen other men soaring in the ethereal void and replies that

he has indeed seen two or three souls of poets floating through the luminous clouds. The servant wants to know whether it is true that we all become stars high up in the air when we die. Master Harvester assures him that this is so. The farm-lad asks him whether the poet Ion of Chios is up there who wrote some time ago a poem "*The Morning Star*". Indeed, he is there and all the others call him "Mr Morning Star" ever since his arrival. Asked who the fiery shooting stars might be, good old Master Harvester says "They are people bearing torches and just returning from a dinner party given by one of the richest stars."

Of course, this is meant to be funny, but in the tragedy "*Hecuba*" Euripides, the contemporary of Aristophanes, makes one of the heroes of his play, the Trojan Polymnestor, ask whether he is to rise to the heavenly hall, whence Orion and Sirius look down with their fiery eyes or whether he is to go down to Hades—a question which will remind the Bible reader of the doubt expressed in *Ecclesiastes* III, 20.

This idea of the souls going up to heaven is certainly not Greek and has nothing to do either with the Hellenic ideas about an underground Hades nor with those about the island of the blessed over sea, the abode of the glorified heroes of old after their departure from the land of the living. Neither is it Babylonian, as has sometimes been supposed—we know from the concluding tablet of the *Gilgamesh Epic* that the Babylonians thought of the shades of the dead as living in a dusty and thirsty underworld. One only of their earliest kings, Etana, had been raised to the highest heaven by an eagle like the Greek Ganymede, beloved of Zeus, and he was said to have fallen down again and to lie as a corpse at the deepest southernmost margin of the sky (above, p. 57 f.).

It is the giant dung beetle in Aristophanes' skit which shows the way to the place where these ideas originated. The verses in question are a transparent joke about the Egyptian symbol of the sun god *Kheper*, the divine scarab supposed to roll the fiery ball of the sun along its orbit as its terrestrial counterpart, the beetle *Ateuchus sacer* forms a pill of hot dung into which it deposits its eggs and pushes it along.

As a matter of fact the idea that the dead are carried up to heaven by the sun god—having succeeded in jumping into his boat floating over the celestial river—so as to reside there amidst the northernmost 'stars which never set' is found in Egypt more than thousand years before Aristophanes and can easily have

been transmitted to the knowledge of the Athenians by the Greek settlers of Naucratis in the Nile delta. It may have been no less a traveller than Aristophanes' friend Plato who had been to Egypt and conversed there with the learned priests of Heliopolis and Saïs who brought this "Oriental fairy tale" to Athens.

In the Pyramid inscriptions the dead and buried king receives from the goddess *Sōthis*, residing in *Sirius*, the kingship in heaven. He becomes a star among stars, perambulating together with *Sōthis* (*Sirius*) and *Orion* believed to be the "soul of Osiris". In the "Book of the Dead" the departed—not only the king, but every user of this magic guide book to the other world—says of himself "I am Orion approaching his country, perambulating the orbit of heaven, the body of my mother Nut". "She has conceived me according to her desire, she has (re)born me (as a star) when her heart suggested it to her."

According to the Greek explanation of the Egyptian hieroglyphs by the scribe Horapollon the star sign ★ means "soul".

Two Egyptian horoscopes on the ceiling of a tomb found at Athribis show the souls as birds with human heads surviving in the constellations which presided over their birth. The idea survives to this day in Egypt where the Moslem *fellahin* say that the stars above are the souls of their dead. Pictures decorating Egyptian sarcophagi surround the image of the dead body with the constellations of the Zodiac. The sky goddess *Nut* is represented bowing over the mummy on the inside of the cover of the sarcophagus of one Tisikrates in the British Museum. The vault of the grave is decorated with the images of the constellations. In the travel tale of Senuhe the text says "Thy mummy case is of gold, thy head of lapis-lazuli and the sky is above thee."

This idea of a cosmic, world wide grave instead of the oppressive narrowness of an ordinary coffin has been borrowed by the Jewish author of the "*Ascension of Moses*" (3 B.C.) who says that the prophet's (unknown) grave is "the whole world". Before him the Greek historian Thucydides said in an immortal passage "The whole earth is the tomb of illustrious men."

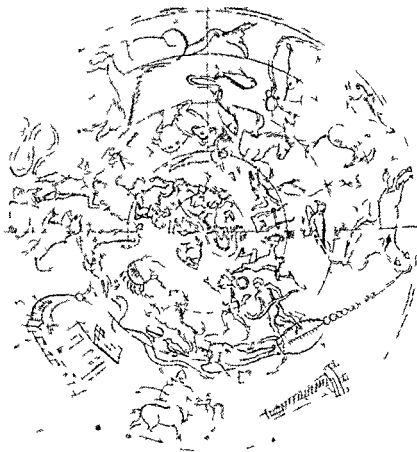


PLATE V

The Planisphere of Timochares From *Codex Vaticanus Graecus* 1087
(after Franz Boll *Sphaera* Leipzig (Teubner 1904 pl 1)

IX

SOULS AS STARS FALLEN FROM HEAVEN

THE logical, symmetrical counterpart to the belief that the souls of the departed will be transformed into stars, is the idea that they have been stars before they were incorporated in human bodies, in other words that stars become souls. The connecting link is offered by the frequent observation of the so-called shooting stars. If the stars are believed to be souls of the dead (above, p. 64), then a falling star would naturally be thought to be a soul returning to this earth.

The Indian astronomer Varahamihira (6th century A.D.) quoted by Albiruni says "Comets are such beings as have been raised to heaven on account of their merits, but whose period of dwelling in heaven has elapsed and who are now seen re-descending to the earth."

Just as souls were believed to ascend to heaven, star spirits were believed to come down from the sky and to wander about in human shape. In Plautus' comedy "*Rudens*"—adapted to Roman taste from a Greek comedy of the Hellenistic age—the star *Arcturus* appears on earth as a messenger and recording angel of Juppiter. The lion of Nemea vanquished by Heracles was explained by Epimenides of Crete (7th century B.C.) as having fallen from the moon—where the Babylonians thought they saw a man swinging a lion around his head (fig. 20).

Stars disappearing for a time from heaven in the rays of the sun—a phenomenon known to the astronomer as their "heliacal setting"—were believed to be on earth or in the underworld during their temporary absence from the sky. Constellations—imagined as complete human or animal forms of light and ether—need not assume another body but their own ethereal shape for such an expedition. But an individual shooting star, interpreted as a soul, would have to be imagined as a mere little spark of fire. It would be supposed to enter through the body of a mother into her unborn child, somewhat like a so-called *corposant* or "St. Elmo's fire"—a "brush discharge" of atmospheric electricity from the top of a ship's mast which the Greeks identified with the *Dioscuri* or Twin Sons of Zeus—appears to settle down on the ruffled hair of a sailor on a dry and sullen winter-day of high electric tension just before a snow- and thunder storm.

Most instructive examples of this belief are found in the early Chinese "*Annals of the Bamboo Books*"

Tu Paon, the mother of Hwang Ti (2698 B C) witnessed a great flash of lightning which surrounded the star Chu of the Great Wain with a brightness that lighted all the country about her and thereupon became pregnant. His mother Niu Tsie witnessed a star like a rainbow floating down the stream to the islet of Hwa. Thereupon she dreamt (that) she received it and was moved in her mind and bore Shaon Haon, the emperor Che (2597 B C). His mother Niu Chu witnessed the Yaou Kwang star go through the moon like a rainbow when it moved herself in the palace of Yio-Fang, after which she brought forth the emperor Tsun Hu (2513 B C). "His mother Sio-ki saw a falling star which went through the constellation Maou and in her dream her thoughts were moved" (a transparent euphemism¹), till she became pregnant and gave birth to King Yu (2205 B C) in Shih Nio."

The glittering particles of dust dancing about in the air and becoming visible in a sunbeam against a dark background—through the optical halo effect now used in the Zeiss Siedentopf ultra microscope—were believed by the Pythagoreans to be souls in the shape of tiny sparks born on the wings of light and descending in shoals on the rays of the sun which could be absorbed through inhalation either by the child drawing its first breath at the moment of birth or by the mother at the moment when she conceived the child. Although there is no explicit evidence for such a belief, there is no reason why similar light- and fire dust should not have been supposed to descend as well in the rays of the moon and other shining stars as in the beams of the sun god sawing the sky (p. 174 f.)

The heat generated by internal combustion in the living body was thought to emanate from an inside fire identified both with life and the fiery essence of the heavenly lights. The hot breath exhaled through the mouth, as long as a warm blooded animal being is alive,—the so-called "spirit of life"—was supposed to be a kind of "fume"—Greek *thymos* "spirit," "mind," "temperament" is the same word as Latin *fumus* "fume," "smoke"—generated by this "fire" inside the body. It was supposed by Heraclitus of Ephesus and the Stoics to be the mind as the organ of feeling, will, thought and perception and to have been kindled by a spark fallen down from the burning and shining lights of heaven.

Leonardo da Vinci writes in his note books that "all souls

must be descended from the sun since they are essentially the warmth heating and animating the body and since"—in the last instance—"there is no other source of warmth in the world than the sun."

On the basis of such crude psycho-physiological concepts, it was easy to imagine a meteor or "shooting star"—often seen to trail behind it a gaseous cloud-trail of incandescent vapourized matter and assuming, according to Babylonian imagination, the shape of a "cat" (?), a "lion," a "jackal" or "wolf," a "dog," a "pig," a "fish"—as being a soul falling from heaven to the ground "rushing down to birth," *i.e.*, to be imprisoned in a body made of earth.

Under these conditions it would necessarily be thought important to ascertain from which constellation such a soul-star or soul-spark had dropped down into a particular human body.

The star or constellation from which it came and those through which it passed on the way down would be thought to influence the character of the child conceived or born at a particular moment.

As soon as groups of stars had been interpreted by astrognostic imagination and named according to these fancies it would, of course, be thought to make a huge difference whether a shooting-star soul emanated from the fiery "Lion" or the cold and slippery "Fishes," from the kingly "Eagle" or the lowly and venomous "Scorpion" (below, p 102), etc.

X

"WORLDS WITHOUT END"

THERE was also another line of thought which led to equally far-reaching conclusions. It did not need a very excited or excitable imagination to see in the pattern of the burnt-out volcanic surface of the moon with its craters and so-called seas the figure of the well-known Man in the Moon, noticed already by the Babylonians (fig. 20), or a girl holding a pig, as the Egyptians imagined it (pl. vi), or two lovers kissing, or an "Old Woman reading a book." A Maori tale tells how a little boy sailed out in a boat in order to catch the moon just at the moment of its rising out of the water and to jump on to it, where he stands now and can be seen to this day. At a

later stage of thought when the moon and the sun were conceived as large worlds floating high up in the air but otherwise much like our own earth, the Pythagoreans abandoned the old idea of the lonely "man in the moon" for the theory that this celestial body was inhabited by a large population of souls of departed men. Plutarch—probably borrowing from Pythagorean sources—describes these lunar souls as wearing wreaths on their head and shining forth brilliantly like rays of the sun.

According to the Neo-Platonist Plotinus some of the human souls will rise up into the sun, into one of the planets or into the world of the fixed stars. Those "astral souls" will need nothing of what they now require while they are in their bodies. They will have incorporeal pure and star-like organs, circle around with the star gods through the universe and help them to administrate the world.

This belief survives in Dante's '*Divina Comedia*'

Parer tornarsi l'anime alle stelle

Secondo la sentenza di Platone

It seems that souls must soar back to the stars

According to the teaching of our Plato

For the great poet of medieval Catholicism each planet is a separate paradise in which the souls are believed to dwell, praising god and singing hymns extolling the blessed Virgin Mary. The substance of these souls is likened to a luminous cloud, but of a greater density, cut and polished like a diamond. They are clad in robes of light with shining faces corresponding in colour to that of the planet. Souls in the sun—being those of great church men and scholars—resemble fiery suns, those on Mars—the spirits of the warlike heroes who fought and died for the Church—glow like rubies, illuminated by a sunray.

Similar ideas are found in India. The oldest of the *Upanishads*, such as the *Brihadaranyaka* and the *Chandogya* teach already that the soul can conquer death, rise to the sun and be absorbed in its luminous matter. Later on a star clerk such as Varaha Mihira (6th century A.D.) teaches how to find out whether a man will go after his death into the realm of a particular planet or into that of a constellation of fixed stars.

Many primitives all over the world consider the sun as well as the moon as countries of light where the souls of the dead survive. The blue sky from which water is seen to fall to the earth when it rains and which seems to melt into the sea at the dim horizon of coastal countries is often pictured as a stream

or an ocean of "upper waters" on which sun, moon and stars likened to floating islands of light on "the ocean of heaven" float in boats (below, p. 78). Sun and moon may equally be inhabited by the souls of former generations.

Aristotle taught that "among the fixed stars not a few are really larger than the earth," Cleomedes knew already that many of them were "larger than the sun." The Pythagoreans are said to have conceived the sun and the moon and finally all the stars as worlds with their own earth, water and atmosphere, all inhabited by their own soul-populations. At the moment when these ghost- and soul-peopled worlds—sun, moon, planet or "fixed" stars—touch the terrestrial horizon, souls may step from them to the earth and conversely from the earth on to them, as it were, born up and down in the buckets of a cosmic irrigation wheel, as the Manichæan gnostics described the zodiacal circle (below, ch. xiv) or "cycle of generation" as soon as the undershot water-wheel had been invented in Syria (just as modern occultists are now using the technical terms of wireless transmission).

This curious concept of a machinery conveying heavenly sparks of light "ascending and descending"—not unlike a modern paternoster lift—from heaven to earth and *vice versa* explains why it was so essential to know which star or constellation was "in the ascent" (or descent) at the moment of a child's birth (or conception) (below, p. 165).

Another idea was that souls are levitated by the heat of the sun, which lifts them upwards like vapours raised from the damp earth by the warmth of its rays.

The great philosopher Plato seems to have taken over and elaborated the Pythagorean idea of a multitude of star-worlds inhabited by populations of souls when he teaches that the creator of the world, the *Dēmiourgos* or divine "artisan" distributes human souls equally over the earth, the moon and as many stars as there are, the soul reverting again, after a spell of time nobly passed on earth, to its former astral abode, an idea which Sir Isaac Newton still considered quite plausible and to which even the critical philosopher Kant was not altogether averse.

The idea of the soul re-ascending to heaven whence it has descended or fallen upon this earth had thus become an integral part of the doctrine of *metempsychosis* or re-incarnation of the soul in a succession of different bodies—a belief taught in the Orphic mysteries, in the Pythagorean secret brotherhood, by the

philosopher Empedocles and, in his old age, by Plato himself. According to Herodotus it was held by the Egyptians too. Since it has never been found in any hieroglyphic, hieratic or demotic text, the Greek traveller's words must refer to the Græco-Egyptian Hermetic books which actually contain this doctrine and may go back in their original form—as Sir W. Flinders Petrie suggested—to the time of the Persian conquest of Egypt. It is by no means impossible that the Iranians who had conquered the Punjab under Cyrus the Great, introduced in their wake certain Indian influences into Egypt. Anyhow, it is certain that the doctrine of re-incarnation is found in India long before this time. It may, however, have developed independently in several centres of thought since it is evidently based on the experience described by French psychologists under the name of "*Deja vu*" and by Christopher Morley as "the trick of the mind that splits the passing instant" and makes one think to have "lived through this before"—a phenomenon which can now be completely understood on the basis of Mr J W Dunne's explanation of time as a serial concept and of the resulting possibility of seeing occasionally bits of the future, as it were, in the indirect field of vision.

If, according to the belief in re incarnation or metempsychosis, reborn souls come down to earth from the sun, moon and other planets their previous abode may plausibly be supposed to have influenced their character and to have endowed them with diverse gifts according to the nature of the planet in question (below, p 162 ff)

For this reason too it would seem to be of the greatest importance to investigate which of the alleged seven planets stood in the sky, particularly in the horizon, at the moment of a given birth.

XI

DIVINE REVELATION OF ANCIENT ORIENTAL STAR LORE?

BECAUSE of the vividness and clarity of his experiences, the ecstatic star gazer of old would be inclined to invest them with the dignity of supernaturally inspired visions, as it were celestial revelations. Once recorded in primitive writing and drawing,

they would be handed down as a precious tradition from one initiate to another, as indeed we can show that they have been for well nigh five thousand years, gaining authority with age, until their historic origin was lost sight of in a haze of astral mythology and astral mysticism.

How much credit may be given to the more or less openly expressed belief of astrologers in the supernatural origin of their traditional star lore—the shaping of the constellation images themselves as well as the alleged knowledge of their beneficent or evil influences—may be judged from the story the Sumerian and Babylonian star gazers told about the origin of their own big constellation catalogue, entitled “The Plough star” after the constellation it starts with.

One day Adapa, the wise fisherman of Eridu—a city situated where at that time the two streams Euphrates and Tigris ran into the Persian Gulf—went out into the sea with his boat. But the south wind came and dipped it deeply into the water. This infuriated Adapa so much that he broke the wing of the south wind. For this crime he was summoned to the sky by the messenger of the gods Il abrat, the “god of wings”—a kind of Babylonian Hermes or Mercury—who brought him, presumably on his back, to the abode of the gods. By the advice of one of them, and owing to the intercession of two others, he was pardoned, and even offered “bread of life” and “water of life,” which would have made him immortal and enabled him to stay among the gods. But having been cautioned by his divine counsellor against accepting “bread” and “water of death” (*i.e.*, poison) he refused, and was therefore sent back to earth. Having been up in heaven and returned to the earth, he was supposed to know all there is to be known about the stars and was credited with the authorship of the great constellation catalogue surviving on certain cuneiform tablets in the British Museum and other collections, and known to have been translated into the languages of the Elamite and Hittite empires.

The ancient Jews thought that the “fallen angels”—the “sons of the Gods” who had been seduced to leave their celestial home by the alluring beauty of the “daughters of men” (*Gen* vi 2)—taught their ancestors the secrets of astrology.

As to the knowledge of the heavenly spheres, the constellations, the orbits of the sun and the moon, it was supposed to have been revealed in a book we still possess, written by the first scribe Enoch, “the initiated,” who had “walked with god” for 365

years (*Gen* v, 21)—*i.e.*, as many years as the solar year had days. The number was interpreted as a hint that this reputed ancestor of the scribes had travelled all over the sky in the fiery chariot of the sun in which later on the prophet Elijah rose to heaven. On this journey he would naturally see all the "secrets of heaven and earth," receiving proper instruction from Uriel, the angel of light.

The stories which the Egyptians tell about the origins of their star lore (below, p. 194) are less like a fairy tale and of a slightly more solemn and mystical character, simply because they are later and intended for the less naïve and more sophisticated Græco-Egyptian reader of the so-called "Hermetic Writings."

But whatever form these ancient tales may assume, do our modern astrological high priests really expect their educated contemporaries who have learnt to take the tradition about the revelation of the Law on Mount Sinai with a pinch of the corroding salt of biblical criticism, to swallow wholesale the claim of divine inspiration raised on behalf of some of our earliest astrological texts by their pseudonymous Greek authors?

Or are they content with the simple faith expressed by the woman who said (above, p. 14) "It's thousands of years old and people have trusted it, so I do not see why I should not now"?

Awaiting a definite answer to this modest question at their earliest convenience, we shall proceed in the meantime to a rapid survey of what philology and archæology combined have been able to find out about the origins of our constellations and the popular beliefs connected with the most important among them.

XII

THE REAL ORIGINS OF OUR CONSTELLATIONS

THE fact that some of the star names still in use are Arabic (fig. 6) such as *Rigel*, "the Leg" or "Foot" for the second most luminous star of Orion, or *Aldebaran*, "the hindmost" for the most luminous star in Taurus—while some are Greek, like *Sirius* (= *seimos*, the "sparkling" or "scintillating" one), *Antarēs* ("=Vice Mars," "representative of Mars"), *Arktouros*

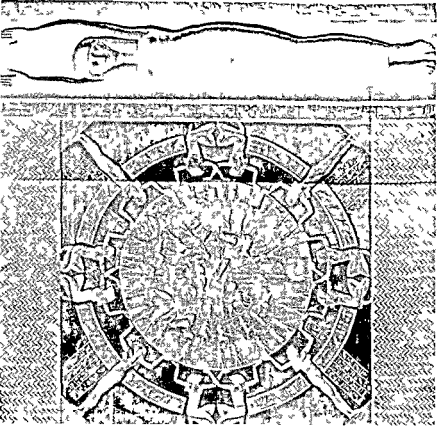
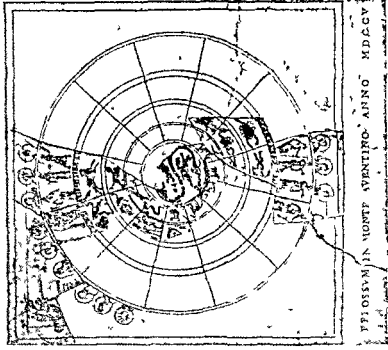


PLATE VI
a) The Planisphere of Denderah, now in the Louvre of Paris After the copper engraving in the *Description de l'Egypte* Antiqu pl 21



(b) Astrological Dicing Board, known as Bianchini's marble

(=the "Bear-leader"), shows clearly that the star-clerks of Europe got their knowledge partly through Roman writers translating Greek sources, partly through Arabic authors who preserved the knowledge of Greek star-lore throughout the dark ages

Plate v shows the only surviving planisphere—i.e., projection

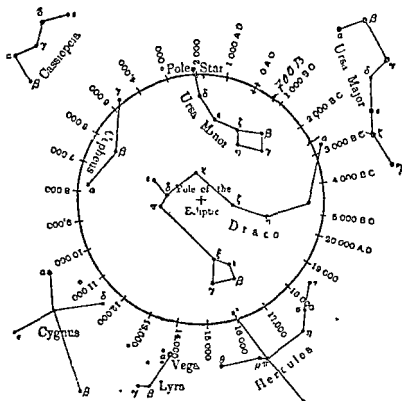


Fig 9

unto a flat surface of a celestial sphere—attached to a Greek text (there are a few others illustrating Latin texts and visibly of a later type). This star-map is supposed to illustrate a catalogue of fixed stars drawn up by the astronomer Timocharēs (quoted by Hipparchus), a contemporary of Ptolemy I of Egypt (328-283 B.C.). It shows the pole-star placed in a point of the constellation *Draco*, equidistant from *Ursa maior* and *Ursa minor*, the "Greater" and the "Lesser Bear." A glance at our fig 9—Sir James Jeans' diagram illustrating the wobbling

of the axis of the earth and the consequent secular shifting of the pole in the course of the ages—will show the reader that Timochares' sky map places the pole into *Alpha Draconis*—the most luminous star of the great circumpolar constellation of the "Dragon"—which was the pole star in the third millennium B C. Also, the quartering of the planisphere by lines running through *Spica*, *Alpha Draconis* to *Cassiopeia*, *Andromeda*, *Cetus* and—vertical to this—through *Sirius*, *Alpha Draconis*, *Aquila* and the middle of the Archer can be shown (fig 5) to correspond to a characteristic quartering of the sky by means of the pole star and the two brightest of all fixed stars observable round about 2200 B C.

Since the astronomical knowledge of Timochares was quite insufficient for the purpose of reconstructing by calculation or otherwise these features of the sky observable at the time to which our earliest Babylonian astrological omina texts refer (below, p 83), it is easy to see that the Greeks must have used, up to the time of Timochares—or rather up to the time when Hipparchus criticised and rectified by his observations what Eudoxus of Cnidus had taught about the situation of the pole star—an old star map, adapted from a Babylonian one, once used by the Hittites of Asia Minor, and already quite obsolete when the Greeks adapted it by certain modifications for their own use, in all probability one or two generations before the Trojan war, as we read in Seneca who says in a curious passage of his *Quæstiones Naturales* (vii 25) "It is not yet thousand and five hundred years since Greece has numbered and named the constellations (*stellis numeros et nomina fecit*)

No complete celestial map of the Babylonians has been preserved. But we have images of certain constellations (figs 20 and 24, below, pp 91 and 97) and a big fragment of a cuneiform description of all constellations found in Assur (fig 10). Also, we are almost compensated for the loss of the cupola covering a hall of judgment in the royal palace of Babylon showing all the constellations in gold on an azure background described by Philostratus after Hellanicus (fifth century B C) by the discovery—due to the first Napoleon's favourite general Desaix—of the planisphere (pl vi) on the ceiling of the "star chamber" in the Upper Egyptian temple of Denderah (the ancient Tentyra). This priceless monument—once believed to be fifteen thousand years old—has since been found to have been completed at the time of the Roman emperor Tiberius, himself a passionate devotee of astrology. But

it can be shown to have been oriented by means of the same great circle running through the star *Spica* used for the purpose of halving the planisphere of Timocharēs, and which the Assyrians had been using for the purpose of orienting their sanctuaries since the second millennium B.C.

A comparison of the most characteristic constellations of

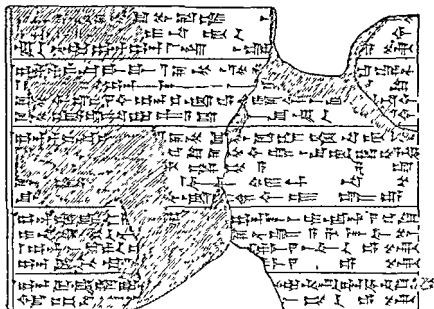


Fig 10

Denderah with their Babylonian counterparts shows the closest correspondence down to minute details (see figs. 26b, 27c, d). So it is evident that this sky-map, too, is based on some very old Babylonian, or rather Assyrian planisphere.

Neither in the Greek planisphere of Timocharēs (pl. v) nor in the Egyptian one of Denderah (pl. vi) are the twelve so-called zodiacal signs in any way distinguished from the others. Nor is the "zodiacal circle" or even the ecliptic marked by lines on either diagram. If a curve were drawn through them on the Egyptian sky-map, it would look more like a short spiral than like a Great Circle. This agrees very well with the fact that no Egyptian hieroglyphic text ever mentions the "zodiac" or "zodiacal circle," and that the earliest Babylonian cuneiform tablets enumerating the constellations in or near the ecliptical belt called the "Wheel of the Sungod" (*harran il Shamash*)

belong to the period of the Persian rule (from about 500 B C to the Parthian period 224 B C—A D 250) Even then the series is not fixed and, owing to the various alternatives offered, the number is not twelve, but eighteen

It may be a pure accident, but it is a fact, that our oldest list of "constellations in the Wheel" or "Path of the Moon" (*harran ul Sin*) is considerably older It is a tablet from the Library of King Assurbanipal (seventh century B C) belonging to the "Plough star" catalogue (above, p 71), which may go back to the fifteenth century B C It is, of course, so much easier to observe directly the passage of the moon through the stars than to infer indirectly the (apparent) position of the sun amidst constellations which cannot be seen while the sun is visible



Fig 11

So lists of what are later called by Arabs, Indians and Far Eastern astrologists the "stations of the Moon" (*menazil al qamar*) may actually be much older than lists of stars in or around the ecliptic Here again we do not get the familiar number of twenty eight stations—one for each moonlit night of the lunar month—but only seventeen, that is, one for every two days of the month, with two or three alternatives to meet the movements of the moon in the latitudinal direction While it is, thus, not true to say that "the twelve signs of the zodiac" as a series are "many thousands of years old," the single constellations in this region can beyond doubt be traced back into the third millennium B C

The "Lion"—with its exact number of nineteen stars recorded by Eratostenes and Hipparchus and represented on the horoscope engraved on the funeral monument of Antiochus of Commagene (below, p 97, fig 25)—is already found on an engraved seal stone of the fourth millennium excavated in Susa and again on the ceiling of the Ramesseum in Egypt (fig 11) built in the thirteenth century B C

This Egyptian sky diagram, first found on a coffin fragment

excavated in Assyut of about 2050 B.C., shows above the Lion a Scorpion-goddess, identifiable with the Babylonian goddess Ishhara, described as standing over the Scorpion—i.e., our *Serpentarius* (Greek *Ophiuchus*,—"snake-holder") described in certain Greek texts as the goddess Hygieia (—"Health") with the snake of the Healer-god Asclepius. The Bull standing opposite the Lion is the classical Taurus, the Babylonian "Bull of Heaven"; the Falcon of the Lion's head is our Cygnus (Swan), the "Bird" (*Ornis*) of the Greeks. The star-map of 2200 B.C. shows that these four constellations mark the four cardinal points of the sky at that age: Deneb in Cygnus, facing Regulus in Leo, the Pleiades, described as "the tail-brush of the Bull," then the East-point, faces "the Breast of the Scorpion in the West."

Even at this very early period—the end of the third millennium B.C.—the Egyptian and the Babylonian constellations have a considerable number of very characteristic figures in common which must be derived from a common source. Now, the Babylonian astrologer Berossos, who came to the Greek island of Cos about 280 B.C. to found there a school of astrology for medical practitioners, tells the readers of a book he wrote that the Babylonians got their astronomical knowledge, together with their system of writing, from a being called Oannēs (in cuneiform *Hanni* or *Khuani*), the "Fish-eater" (*Ichthyophagos*), who wore a fish-skin cap and fish-skin coat, whose images could still be seen (our fig. 12) at the author's time in his own country, who landed from the sea and returned to it in the night. Now, the admirals Nearchus and Onesicritus sailing the fleet of Alexander the Great to India found on the coast of Carmania east, of the Persian Gulf—the modern Mekran and



Fig 12

Baluchistan—tribes which they described in their reports as "fish eaters" (*Ichthyophagoi*), and who actually wore cured fish skins as overcoats—much like the oilskins and sou'westers of our own fishermen

Comparing the two sources, it seems clear that he whom the Babylonians called Han ni or Khua ni ("Fish of Oil")—the signs can also be read *Ha zal* or *KUA zal*, "satiated with Fish," which corresponds to Greek *Ichthyophagos*—and whom they worshipped as the 'god of the tablet writers, is a mythical representative of the sea faring and fishing tribes of the Carmanian coast who came to the mouth of the rivers Euphrates and Tigris to trade with the Mesopotamians, returning by night for safety's sake, to the sea—: e , to their ships anchored at some distance from the shore. These people seem to have taught the early Mesopotamians a system of picture writing, similar both to that found in prehistoric Elam and to that recently discovered in the ruins of Mohenjodaro and Harappa, excavated in the Indus valley, and an astronomy clearly devised for the purpose of navigating by the stars in tropical seas where the stars rise in vertical orbits and can serve for the purpose of an astral compass card such as was used before the discovery of the magnetic needle by Arab sailors navigating the Indian Ocean, the Persian Gulf and the Red Sea

Since the Egyptian star diagrams found in tombs and on the inside of coffin lids (plate vii) ever since the third millennium are clearly designed for the purpose of enabling the souls of the dead to navigate their barges on the heavenly ocean on which they were supposed to sail along for ever after their death, and since there are rock engravings in the Wadi Hammamat, a valley leading from the Red Sea to the Nile, and other testimonies proving that people with a "Mesopotamian" type of ocean going ship, worshipping the solar Falcon god Horus, immigrated into Egypt at the beginning of the so-called Dynastic Period, it seems plausible to suppose that both the Egyptians and the Sumero-Babylonians and Elamites got their characteristically nautical astronomy from the prehistoric inhabitants of the Baluchistan coast, where numerous ruins have been reconnoitred by Sir Aurel Stein, but, unfortunately, not yet excavated

XIII

DECAN-STARS AND TWELVE-HOUR STAR CYCLES

THE planisphere of Denderah gives no particular prominence to the constellations otherwise known as the "signs of the zodiac" It shows, on the contrary, an outer circle of thirty-six curious figures (plate vi) characterised by hieroglyphic inscriptions which could be identified with the Egyptian names of the so-called decan stars, quoted by Greek and Latin astrologers such as Hephæstion of Thebes and Firmicus Maternus from the writings of Hermes Trismegistus

These decan stars—almost forgotten by modern astrologers, at least in the English speaking countries—are the elements of the ancient "star-calendar" alluded to in the first chapter of the so-called Books of Moses, where the old scribe says (*Gen* 1, 14) that God made the lights in the firmament as "signs for seasons, for days and for years"

It would be a safe bet to wager that not one of the astrologers who write about the stars in the popular Press could read this "star-calendar" from the sky as the shepherds and farmers of former centuries were so well able to do (fig 17b)



Fig 13

The facts which they would have to know in order to do what those men habitually did, and in order to understand the origins of their own star-craft, are described in the following words and illustrated with a simple diagram (fig 13) by Sir James Jeans

"Strictly speaking it is only roughly true that the earth turns in space once every 24 hours, it is not exactly true. It is 24 hours from the instant when the sun is overhead one day to the instant when it is overhead the next day, but the earth makes a little more than one complete turn in this interval. A complete turn brings the earth back to the same position under the stars, but as the sun is itself moving forward through the constellations all the time, a little more turning is needed to bring the earth to the same position under the sun. The sun appears to move right round the heavens once a year, so that in a complete year the sum total of all these extra bits of turning must just amount to one complete rotation. As there are $365\frac{1}{4}$ days in a year this means that the earth makes $366\frac{1}{4}$ revolutions in $365\frac{1}{4}$ days. From this, the time of a complete revolution in space is found to be 23 hours 56 mins 4 secs. Every day the earth spends this much time in making a complete turn in space, and then a further 3 mins 56 secs in catching up the motion which the sun has made through the sky in 24 hours. If we adjust the pendulum of a 24 hour clock so that it gains 3 mins 56 secs every day, then the position of its hands will repeat itself every 23 hours 56 mins 4 secs.

"Thus, each time the clock tells the same hour, such as 2 o'clock or any other time, the earth lies in the same direction in space, and exactly the same stars lie overhead."

This means that according to a non adjusted ordinary 24 hour solar clock—*e.g.*, according to an ancient Babylonian or Egyptian water clock—a given star would rise, culminate and set about four minutes earlier every day. This phenomenon, which the ancient astronomers called "the precession" or "forward wandering" of the stars (*propóreuma astéron*) relative to the sun, and which can be demonstrated by means of any one of the numerous revolving star maps published in the last century, must have been noticed as soon as water clocks were used (in Egypt they were known under the 12th Dynasty—*i.e.*, about 1900 B.C.), as soon as the constellations were mapped out and as soon as the most conspicuous stars had therefore become familiar to the eye. The four minutes difference between solar and sidereal time—noticeable even with such coarse instruments as the ancient water clock and balance—adds up to about forty minutes every decade—*i.e.*, to thrice forty,

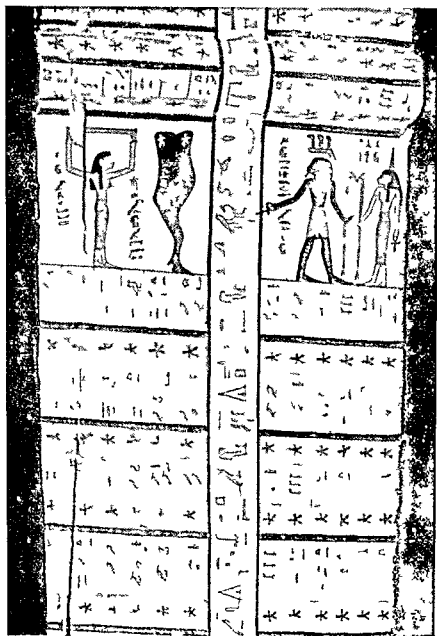


PLATE VII

The Egyptian Decan stars on the lids of a sarcophagus of the 6th Dynasty found at Assut. Courtesy of the Warburg Institute

or 120 minutes, or two hours, or one Babylonian double hour (*beru*) every month

In other words, every month the constellations of another twelfth part sector of the southern, the equatorial and part of the northern zone of the sky would be seen to rise shortly before sunrise or shortly after sunset in the east, or to set shortly before sunrise or shortly after sunset in the west, or to culminate exactly at midnight in the south

A number of sarkophagi of the Heracleopolitan Dynasty (c 2050 B C) found in Assiyut (pl. vii) and certain tomb ceilings of various periods (pl. viii) show that the Egyptians had at that time—and possibly long before it—selected thirty six stars the rising, setting and culmination of which would enable the soul of the dead, as it enabled the living, to ascertain the approximate date of the year as well as the hour of the night

Our modern Nautical Almanacs contain the positions of a large series of so-called "ten day" stars and of a smaller number of "circum polars," selected in such a way that their transit through the meridian can be used by an observer knowing his location for determining the exact hour, if he knows the calendar date, or to find the forgotten calendar date, if his time piece is correct

Exactly so the above mentioned Egyptian coffin lids (pl. vii) and tomb-ceilings (pl. viii) exhibit characteristic diagrammatic "star calendars" and "star clocks," consisting of a group of images representing the circumpolar constellations and the series of the thirty six so-called decan stars

The former are combined in a most characteristic way with the stars marking the tropical points and with those through which the "primary circle" used by the Assyrians for the purpose of orientation (above, p 74) is now known to have passed (fig 5) The latter are supplemented in the tombs of the Ramesside Dynasty by a series of twenty four tables of hour-stars dividing the nights of each of the twenty four fortnights of the year into twelve seasonal hours of various length (fig 14)

Each of the "ten days" stars is found—in some of the New Kingdom tombs—connected with one or two of the "children of Horus," four divinities patronising the four direc-



Fig 14

tions of the horizon and also supposed to dwell in the four stars *Alpha-Eta, Gamma-Delta Ursæ maioris* serving at that time, on the one hand as "pointers" towards the North pole of the sky, on the other hand as pointers to the autumnal and vernal equinoctial points of the sky, because a line drawn through *Alpha* and *Eta Ursæ Maioris* runs across *Scorpio* and *Taurus*

The co-ordination of the cycle of decan stars with these and other divinities of the "four corners" of the world is explained by a Græco-Egyptian astrological dicing board found on the Aventine in Rome in A.D. 1705 (pl. ix) showing in concentric circles the circum polar stars, the twelve hour stars (the so-called *Dodekâhōros Chaldaikē*), the zodiacal constellations of the fixed and the twelve zodiacal "signs" of the movable ecliptic (below, p. 112) finally the circle of the thirty six decans, each with his "planetary faces" (below, p. 209), the whole oriented with reference to the "four winds"

Each decan star was actually supposed to rise with a particular wind—*i e*, at a particular point of the horizon. They are said in a hieroglyphic inscription to "bring the storm and drive the clouds away", in a Zoroastrian text quoted by an eighth-century bishop of Maumias in Syria, Kosmas of Jerusalem, they are listed as "thirty six wind gods", in a Greek Testament of Solomon eighteen of them have names beginning *pyx*—*i e*, the Greek transcription of Hebrew *ruah*, "wind". The Egyptians called these thirty six stars the "navigators"—we should say "navigation stars"—or *baktyou*, translated *leitourgoi* by the Greeks, which means "the serving stars" or "stars on duty". The name "decans"—*i e*, "ten day stars"—is not Egyptian, but a Greek translation of a Babylonian military title, *rab eshirtē*, "master of tens," also found in the Hittite armies of the fourteenth century B.C. and in the tribal organisation of Israel (Exod. xix, 21, 25), introduced into Egyptian and Greek usage through King Nechepso's translation of the Assyrian book *Salme shakanakē* (below, p. 128) at the time of Assurbanipal (seventh century B.C.).

According to Diodorus Siculus (ii, 29)—taking this account from Hecataeus of Abdera, who derived it from Democritus of Abdera's book "*On the Sacred Writings in Babylon*"—the Chaldeans say that "below the orbit of the planets thirty (six) stars are placed" (below, p. 83), "which are called advisory gods" (*theoi boulaoi*)—*i e*, the thirty-six decan stars. "One half of them supervise the regions above" (*videl* those which are visible in the sky at the time), "the other half those

below the earth" (*vide* those who have temporarily disappeared and are supposed to dwell below the horizon—in Egyptian *sa du'at*, "the watch of the Underworld") "Every ten days a star is sent as a messenger from those above to those below"—*i e*, one constellation sets heliacally (above, p 81), and in the same way one of them from those below to those above. This movement is a constant one, and repeats itself eternally."

In other words, every ten days another one of a suitably selected series of thirty six stars would be seen to rise shortly before sunrise or shortly after sunset in the East, or to set shortly before sunrise or shortly after sunset in the West.

Some would be seen to set while others rose or passed through the meridian. These easily observable corresponding phases, for which the Greeks used the general term *paranatolai* or *paranatellontes* (*asteres*), would be seen to vary from ten to ten days.

Fragments of a circular clay disc with the names of these thirty six decan stars of the Babylonians—officially called "The Thrice Twelve"—*i e*, "Three stars for each month"—have

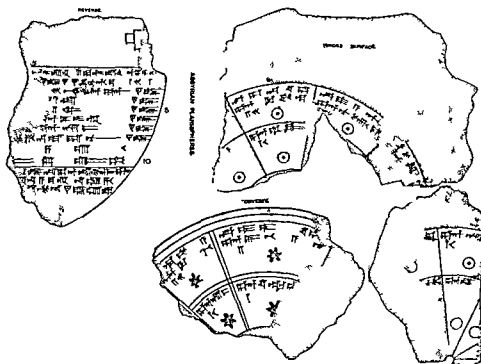


Fig 15

the navigator of a ship or the leader of a caravan in the featureless desert to establish an astral compass-card such as Arabic skippers in the Red Sea and the Indian Ocean still used in the early 19th century and may, for all we know, still keep to-day for the purpose of "steering by the stars"

To give just one example from among the 36 cases of the twelve spoke wheel dial

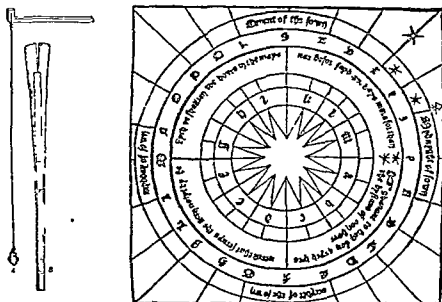


Fig 17a

In the equinoctial sector of the month of March we read the Babylonian name of this month *addaru*—surviving as *addar* in the Aramæan calendar of the Bible, still used by the Jews—followed by the words "Constellation 'Fish of (the god) E-a'" —our *Piscis Austrinus* with the first magnitude star *Alpha Piscis Austrini* called *Fom al Haut*, "Mouth of the Fish" by the Arabs. Then the number 180, meaning "180 *ush*"—"twelve hours" and the sign \bigcirc "end of the day" or—in the fragment in the middle of fig 15—the sign \star meaning "star". This reads the "end of the day" (occurs) after "twelve hours" (Observe) star "Fish of (god) Ea"

At the time of Sargon of Accad *Fom al Haut* stood almost exactly in the equinoctial colure, 45° south of the equator with the Right Ascension of xviii hours, that is to say, it actually crossed the meridian about 6 p.m. just after the

equinoctial sunset. *Eta Piscis Austrini* rose right in the South-East point of the horizon and set right in the South-West point, thus marking off the beginning and the end of the southern quadrant and enabled—in the tropic regions of the Persian Gulf and the Indian Ocean where stars rise and set nearly vertically—a ship's captain to steer for six hours due SW. Its distance from the pole-star—then *Alpha Draconis*—was exactly $135^{\circ}=90^{\circ}+45^{\circ}$, in other words, it halved exactly the



Fig 17b

southern quadrant of the meridian. *Fom al Haut* rose exactly at the South-East by South point and set at the South-West by South point, thus marking another essential division of the astral compass-card. The culmination of the star in question—in this case—the brilliant *Alpha Piscis Austrini*—could easily be observed by means of a plumb-line seen to run through the pole-star *Alpha Draconis* and thus representing the meridian which *Fom al Haut* would be seen to cross at nightfall, exactly as the shepherd in fig 17b is shown on the left sighting first the pole-star and on the right observing the transit through the meridian of the stars forming the easily recognised W of *Cassiopeia* called *epinnu*, "the Plough" by the Babylonians and mentioned in the innermost case of the *Nisannu* (April) sector of the cuneiform dial fig. 16, p. 84.

Neither the Egyptian nor the Babylonian decan stars have anything to do with the "zodiacal circle" The reason for this is easy to understand Because the ecliptic is only slightly inclined against the equator (fig 2) zodiacal stars rise and set only a few degrees south or north of the East and West point of the horizon and are therefore of little use for the construction of an astral compass-card The identification by the Hellenistic astrologists of the Egyptian decans with the three thirds, of ten degrees each, of each zodiacal sign is due to a late, wholly artificial equation of two systems which have originally very little in common

This result—which is certain beyond the possibility of doubt—proves clearly that neither the early Babylonians nor the Egyptians were in any way particularly interested in the circle of constellations through which the apparent orbit of the sun was supposed to cross by the ancient Greeks, simply because these stars cannot be seen when the sun shines, nor the sun when these stars are visible

This circle—the so-called zodiac—gained its importance only when the progress of spherical geometry enabled the Greeks to construct a more or less correct celestial sphere and to plot the apparent orbits of the sun and the planets upon it Neither the ancient Egyptians nor the Babylonians had a word for a "sphere"—the Egyptians called it an "egg" (thinking of the very round ostrich egg), and believed that the "world egg" had been fashioned on the potter's wheel by their god Chnoum, the Babylonians called it "a ball" (*aranu*, from a verb meaning "to throw") Neither of them ever seems to have thought of constructing either a terrestrial or a celestial globe. This was almost certainly an invention of the Greeks, who also seem to have discovered the obliquity of the ecliptic (and of the zodiacal circle) in relation to the celestial equator and the unequally rapid oblique ascensions (*anaphorai*) of the zodiacal signs

It follows that no part of the system of astrological forecasting in any way connected with the system of the twelve zodiacal signs (above, p 48, below, p 89) can really be based on the experience of "thousands and thousands of years" accumulated by the Chaldean and Egyptian priests (below, p 192 ff), as the hellenised oriental sooth sayers exploiting the credulity of the ignorant Greeks and Romans claimed when they first introduced these newly invented methods, attributing their invention to those alleged "ancient sages" Nechepso and Petosiris (below,

p 193), who were neither so very ancient, nor really responsible for these rather recent innovations

Because the twelve equal parts of the ecliptic and of the zodiacal circle, rising and setting in very unequal periods of time, were quite useless for the purpose of dividing the night into twelve (seasonal) hours, the Egyptians had always used a system of stars quite independent of the zodiac as "hour-stars" (fig 14). It seems that only after the Babylonians had begun to study—in the Persian period (above, p 75 f)—the stars in "the felly of the sun," the Egyptians, borrowing the Babylonian system of dividing the whole length of the sidereal day into twelve equal parts, or the Babylonians themselves selected a number of constellations on the sky as pointers marking the passage of these twelve, equal "hours" (*beru*), twice as long as one of our own equinoctial hours. These twelve constellations



Fig 18

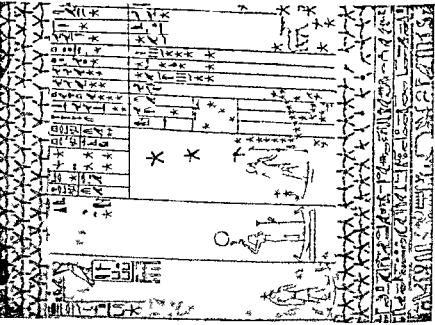
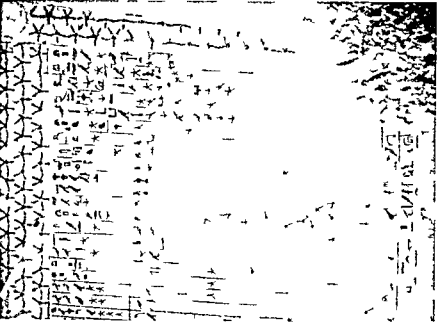


PLATE VIII

Egyptian Decans as painted on the ceiling of the tomb of Sennefer, D el Bahi, Courtyard of the Wabtu In use



called *dōdekahōros* (*kjklōs*) = "twelve hour" cycle, by the Greeks, were not used very much by occidental star clerks. But they are interesting because the star symbols in question can be shown to have migrated—presumably again by the seaborne trade of Egypt and Mesopotamia with India and the Far East—as far as China (fig 18) and Japan (pl ix b)

XIV

THE "TWELVE SIGNS OF THE ZODIAC"

BOTH on the planisphere of Denderah (pl vi) and on the celestial map of Timochares (pl v) the reader will easily be able to pick out the familiar figures of the twelve constellations mentioned above, p 48

The usual star maps show the single stars named with the Greek letters first introduced by Bayer in his *Uranometria* (1603), and still used for the purposes of modern astronomers. On our maps, fig 6 and 7, the celestial equator is indicated in the position which it occupied at the time of Hipparchus (about 150 B C)

At that time the vernal equinox stood at the beginning of the section occupied by the so-called "Ram" (Greek *Κριος*, Latin *Aries*) seen in our fig 19 between the marks 1800 B C and 1 A D of the time chart. The Babylonians had had a "leading bellwether" (*Lulimu*) where the Greeks saw Andromeda. Cleostratus of Tenedos, the disciple of the philosopher Thales, introduced the golden Ram—supposed to have carried poor Hellē, the heroine whose male counterpart Hellos or Hellen gave his name to Greece (*Hellas*), through the air and to have dropped her into the Hellēspontos ("Helle's path")—into this pre eminent part of the zodiac, evidently for reasons of national pride

The Babylonians had seen in the place of our Aries a "hired hand" (Sumerian *hun gar*, Babylonian *agru*), because the Mesopotamian peasant was in the habit of hiring additional labour for urgent agricultural work at the time of the year when these stars rose. The Babylonian name of Andromeda, "bellwether," survives in the Latin epithet *dux gregis* (leader of the herd) for our Aries. The Greeks in Egypt identified Aries with the ram symbolising the Egyptian god Ammon. It seems that

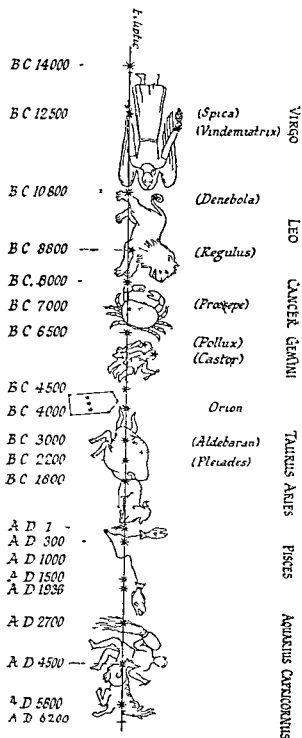


Fig 19

some draughtsmen represented the animal not in this peaceful position, but charging an imaginary enemy with his horns

Sic ipse in cornua fertur, et rust ut vincat

says the poet Manilius

Aries is not composed of very luminous stars. This is said to be the case because the ram of the above quoted Greek legend was despoiled of his golden fleece, which was brought to Colchis before the skinned beast was transferred to the sky. Nevertheless, the "Ram" remains a woolly creature for those woolly thinkers who teach that men born under Aries will be wool workers and make a fortune in the clothing industry. (Again, this idea cannot have been tested by the experience of "thousands of years," because a Babylonian would have expected a man born under this sign to finish his days as a hired labourer!) Because the mythical ram fell into the floods and on top of this accident was fleeced, people born under Aries have to be prepared for sudden turns of fortune and grievous losses. They will chase breathlessly after a new fortune, because the "Ram" is one of the most rapidly rising signs of the zodiac.

These admirably logical conclusions are completed by characterological deductions: children of Aries will be timid and a little stupid—what else can you expect of sheep?—but they will be subject to sudden fits of anger, this "choleric" temperament being especially derived from the horns of the "Ram." Because of these furious outbursts, poor Aries is described—in spite of its total lack of luminous stars—as a "fiery sign" (*signum ignitum*). A high pitched, sheepish braying voice is another painful affliction of those born under the constellation which our star clerks symbolise by the Egyptian hieroglyph Υ , showing a pair of horns.

A still more astonishing exhibition of astrological logic is the description of bold Taurus as an ox by the poet Manilius. The Greek picture (fig 7, 8, 19 and pl v) of this constellation and a Babylonian tablet of the Seleucid period (fig 20) show



Fig 20

the animal without its hind parts (which are, however, fully visible in the Egyptian sky map (pl. vi). But the Babylonian Gilgamesh epic tells us that the two heroes Gilgamesh and Enkidu tore off the "right" fore leg (*imittu*) of the "heavenly Bull" and threw it "into the face" of Ishtar, the daughter of the sky god, who "raised a wailing over it"—as the reader can see on an Egyptian sarcophagus (pl. vii) and on an archaic Achæan vase found in Bœotia (fig. 21). The torn off "Foreleg"



Fig. 21

was seen by the Egyptian star gazer in the stars of *Ursa Major* (pl. vii). The "Haunch" of a bull (Babylonian *kaslu*, Hebrew *kesel*, read *kasel*) is our "Great Bear," the star misread *Kesl* in our English version of the book of Job. The "Benedictions of Jacob" accuse the twins, Simeon and Levi, of having "mutilated a bull" (*shor*, not "a wall") "in their wrath." It seems that these miscreants had improved on the exploit of Gilgamesh and Enkidu, by tearing off both hind legs, since the prophet Isaiah (xiii, 10) speaks of the "two Haunches" (*kislayim*, misread *keslim*), obviously meaning the two very similar star groups *Ursa major* and *Ursa minor* (fig. 7). Deprived of his hind parts, poor Taurus becomes not only a harmless labouring ox, but—more shame!—Ovid finds it difficult to distinguish whether the beast ever was a bull or—a cow!

*Vacca sit an Taurus non est cognoscere promptum
Pars prior apparet posteriora latent*"

(Fasti iv, 717 ff.)

In the one case it might be the Bull who carried Europa (= *erubah*, the "evening star") from Phenicia to Crete on his back, or the Bull whom the Minoan queen Pasiphaë—that charmingly "Parisian lady" of Knossos—favoured with her

love. Otherwise it must be the unhappy Iō (i.e., Egyptian *Iw'*, "the cow"), whom Jupiter loved before the jealous Juno changed her into a cow. According to the ironical sceptic Lucian, Taurus might be the bull Apis worshipped by the Egyptians. In Petronius' *Banquet of Trimalchio* the parvenu calls him endearingly "*Taurulus*," the bull-calf, a way of speaking which induced certain Jewish astrologers, like Ibn Ezra



Fig 22

and the scholars of the Renaissance, to identify Taurus with the "golden calf" worshipped by the idolatrous Hebrews at the foot of Mount Sinai (fig. 22). This sounds strange; but who can tell? The Jews are capable of anything!

Anyhow, the doubts concerning the sex of Taurus, based on the uncertainty and diversity of astro-mythological interpretation, are a sufficient reason for Firmicus Maternus to hold this constellation responsible for the birth of perverts and impotent men (*cinædorum impurorum et sterilium genituræ*)—another piece of logic that will not appear convincing to anyone except to "astro-logicians."

Children born under the Bull can be recognised by their having a round head, broad face, thick hair, big, rather square (!) eyes and eyebrows. In the white of the eyes they have red veins, thick eyelids and eyelashes. Their mouth and nostrils are round, nose and lips broad, ears thick, big, pointed; specially strong are the upper parts of the body—obviously because the lower parts of the Bull are not visible in the astral image. From the legs upwards these children grow upright, but their body is heavily built. The long and the short of all this is, of course, that they look like cattle. It hardly needed a god to reveal this sort of wisdom.

According to Manilius' poem, Taurus makes agriculturists—obviously because the bull or ox draws the plough—unpretentious settlers, peaceful people, sound in body and mind. But they may reach the highest positions, as the example of Cincinnatus shows, who was called from the plough to become dictator and save Rome.

As to the Twins (*Didumoi*, *Gemini*), the Babylonian "Plough-star" list says they represent the Sumerian gods Lugalirra, "king of the reed-marsh"—i.e., the moon-god as shepherd (of the stars)—and *Meslamtaē*—i.e., the god Nergal of the Underworld—or, alternatively, the heroes of the Babylonian epic, Gilgamesh and Enkidu. Also we have a cuneiform description of this constellation found in Assur which says that one of the



Fig 23

two—the shepherd-god—held "a crook" (*hinshi*), the other a "sickle-axe" (*azkara pasha*), an instrument still used for lopping branches of trees, and at that time for cutting down reeds in the marshes. This god of the Underworld with the sickle-axe is the prototype of the familiar symbol of "Death with his scythe." The sickle-axe in question is evidently the "sickle sword" (*gamlu*) which the Greeks called the *harpē* (curved sabre) of Perseus. The symbol has survived in all modern pictures of Gemini derived from the star-map of Michael Scot (1175-1234), who studied in Toledo under Arabic teachers and became astrologer to Frederic II of Sicily—*e.g.*, in Ketham's engraving of 1491 (fig. 23). The shepherd's crook is equally frequently given to one of the Twins in medieval and Renaissance pictures. Instead of the Babylonian pair of heroes, Gilgamesh and Enkidu, the Greeks substituted their Dioscuri, Castor and Pollux, or their Amphiōn (with the lyre) and Zēthos, or their gods Apollo—another lyre-player and shepherd-god like Lugal-Girra—and Heraklēs, Latin Hercules, another itinerant slayer of monsters like Gilgamesh, or, still more like the Babylonian pair, Herakles and his helper Iolaos, fighting against Hydra and Cancer.

Sometimes the two heroes were thought of as Herakles and Theseus, sometimes the two gods were seen as Bacchus, with the "sickle" interpreted as the curved vine-pruning knife—and Apollo with the Lyre (Ketham's engraving, fig. 23). According to Manilius, Gemini make men indolent musicians (because the shepherd is supposed to lounge and idle), preferring the lyre to the trumpet calling the warrior, or students of astronomy and mathematics (because the shepherds are supposed to watch the stars, and because the strings of the lyre and the monochord taught Pythagoras the correlation of numbers and sounds).

The Crab (*Karkinos*, *Cancer*) was explained by the Greeks as the crab that had pinched the heel of Hercules when he sought the Hydra in the Lernaean swamps. The Babylonians already called it *shittu*, "the Crab," or *nangaru sha eqli*, "the carpenter of the field," because certain land-crabs (*Geocarcinus ruricola*, pl. xiv) are known to climb trees, cutting twigs and leaves with their serrated, saw-like claws as one is shown on Mithraic monuments, on a Syrian seal-cylinder and on the so-called "zodiac of Gezer."

This is the reason why a carpenter or stone-cutter (*nangaru*, like Latin *faber*, means both) is sculptured below the "Crab" on the zodiac of Notre Dame in Paris (pl. x) (thirteenth

century), where Virgo is represented by the Blessed Virgin with the infant Jesus (below, pp 99 f) The Crab—*shuttu*, the backward movement of which is already mentioned in a cuneiform text—is supposed by Macrobius to indicate the “tropical” point where the sun, having reached the highest point over the horizon, begins its backward movement again.

The classic star clerks explained the Crab sometimes as a marine crustacean, sometimes as a river crayfish, a divergence which causes variations in the forecasts for people born under this sign. Curiously enough, they call it a female sign without telling us why. But the assertion that the Crab makes the new born into an unscrupulous merchant and speculator avid of gain is obviously derived from the crustacean’s habit of pinching mercilessly what ever it can seize with its pincers. Such people will send out ships oversea, obviously because the Crab is thought to be a marine being. According to the gnostic astrologers quoted by Hippolytus of Rome (about A.D. 200) children of Cancer are small, have a reddish skin (because boiled crabs are red), a small mouth, a broad face, bluish, rather nice eyes, limbs of various colours (*poikila*, why?) and hair like sea kale⁽¹⁾. According to another Greek source the children of the Crab have big joints, broad bones, thick woolly hair, a big, round face, dark skin, round eyes in a broad head. They are very prone to love affairs, because crabs and other marine animals are sacred to Venus believed to have been born from the foam of the sea—but they are hard (because of the crab’s carapace), libellous and usurious money lenders (the pincers¹). They have square teeth (the indentations of the crab’s pincers), and their upper limbs are rather contorted (like crab’s pincers). They are changeable (because the sun changes its apparent course in Cancer), deal with all sorts of merchandise as hawkers (land crabs are often seen to carry little stones or bits of wood). They are gardeners making a living from young vegetables (the leaf cutting land crab). Can anybody imagine a more childish way of reasoning on the basis of imaginary analogies?

The Lion (*Leo*) is already found in the Babylonian zodiac, (fig 24). The most luminous star in the Lion’s heart is called *sharru*, “the king,” translated *Bashiskos*, *Regulus*, the ‘little king,’ by the Greeks and Romans. They explained it as the Nemean lion strangled by Herakles, but revived and placed among the stars by the goddess Hēra (Juno). The Græco-Egyptian Manetho calls him “asthmatic”—as you would expect of the poor beast, having been so nearly asphyxiated for good

and all! Naturally, the constellation is responsible for people being choked, or suffering from *angina pectoris*. Because of the Star Regulus, it makes kings, but also hardy hunters, people organising hunts (*venationes*), zoo-keepers and, on the whole, simple, generous and guileless souls. Children of Leo are light-



Fig 24

coloured and red-haired, sweet to the taste—presumably when kissed—well-formed, bold, swift, violent. They keep their opinions to themselves (the strong, silent men!). Their upper limbs are more developed than the lower ones; they have powerful knees (I should think so!) They have a fiery colour, small ears, a hairy, broad breast, thick hair (a mane), broad teeth, a slender body and thin legs. They are domineering, choleric, bold, broad-breasted, with broad foreheads. They are leaders in enterprise, self-willed, energetic, and will attain glory and wealth.

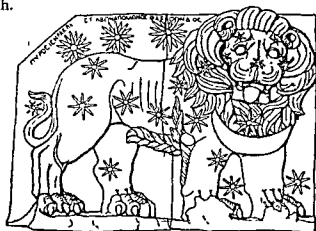


Fig 25

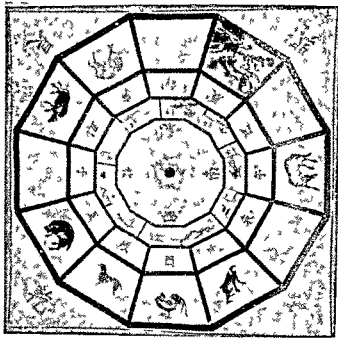
A Byzantine *zoidiológion* (i.e., a zodiacal forecast) says: "a boy born in Leo will incline to illness and is born to a difficult life" (the asthmatic lion strangled by Hercules). "His body is round and broad, he has great hands and feet, middle-body, earns his living with difficulty and painfully" (the lion in the empty desert): "he is ill for five years" (the strangled lion again) "and will suffer from liver and



The Græco Egyptian *Dodekahoros* on a marble slab discovered in Egypt by M. Daressy (After Boll Bezold Gundel, *Sternglaube und Sternendeutung* Leipzig 1926, pl. XIV)

PLATE IX

The Japanese Twelve Hour Stars Painting on paper
Munich Ethnographical Museum (*ibidem*) Courtesy of
the Warburg Institute



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Fig 24

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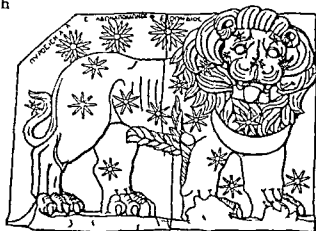


Fig 25

A Byzantine *zoidiologion* (i.e., a zodiacal forecast) says "A boy born in Leo will incline to illness and is born to a difficult life" (the asthmatic lion strangled by Hercules). "His face is round and broad, he has great hands and feet, middle-sized body, earns his living with difficulty and painfully" (the poor lion in the empty desert). "he is ill for five years" (the "strangled" lion again). "and will suffer from liver and

stomach trouble" (asthma was believed to be connected with such illnesses) "If he reaches his twelfth year" (the period of Jupiter's revolution, below, p. 198) "and survives the fifteenth, he reaches a great old age" (lions were believed to be very long lived, the sign of Leo takes a long time to rise, the fifteenth year corresponds to the middle, fifteenth degree of the zodiacal sector) "As a man, he has to suffer many hardships" (the desert life again) "and he is cunning and full of ruses. He flees from his parents' house" (all feline animals are driven away by the old ones as soon as they can fend for themselves) "He is intelligent, hard, prone to fury, high spirited, contrary, self-willed, sharp, irate. His neighbours insult him a good deal and he gets into trouble through his wife, whom he survives, marrying another" (there was a "lioness" in the Babylonian star map, also seen on the Denderah planisphere—pl. vi) "He will perform a difficult secret task" (the lion hunting by night) "He falls down from a height" (the lion trapped in a pit by the goddess Ishtar in the Babylonian Gilgamesh epic), "will be wounded by a sword" (the Egyptians interpreted the main stars of the Lion as a broad knife, coins of Mark Antony show the lion and the sword, lions were trapped in pits and made to fall on upright swords) "A man born under Leo will be wounded by a wild animal, will be ill for three years" (the *Physiologus*, a Greek "*Bestiary*" written in Egypt, probably by Jews or Christians, has a story that new born lions are without life for three days, but on the third the lioness breathes life into them) "He should be wary of snakes" (*Leo* stands on *Hydra*, figs 7 and 24), "goes abroad and leads a normal life, will suffer want in secret, is envied while earning his livelihood, will have to divide his wife with another" (lions are known to fight for the favour of one female) "He will be ill, because this star is bad" (the asthma again) "His relatives will make it difficult for him" (felines driving

the Crab stands next to the Lion in the zodiac, see figs 7, 19, *Canceri sidera mixta Leoni*, says Lucan), "burn them" (the yellow Lion as the sign of the hottest month is a fiery animal), "mix the ashes with oil" (the next sign Virgo is often shown holding an olive branch) "and anoint himself with the resulting unguent" The Christian copyist adds "he should invoke the penniless saints, *hagioi anargyroi*—presumably present them with some money through the intermediary of the soothsayer—"and he will be healed"

The Virgin (fig 24) is often represented as carrying an ear of corn—the star *Spica*, already named "the Corn ear" in the Babylonian sky map, where Virgo is called "the goddess Shala, the announcer or prophetess (*nabat*) of the sprouting corn" Because Babylonian *shubultu* (Arabic *sumbulah*) means "corn-ear," *Sibylla*—first mentioned by Heraclitus of Ephesus (sixth century B.C.)—becomes for the Greeks and Latins a general name for a prophetess The Greeks called her *Astraea*, the starry one, or *Dikē* (*Justitia*), because she is thought to hold the neighbouring "Scales", Demeter—because she holds the Corn-Ear, *Fortuna*—because the cuneiform *Uranography* of Assur describes her as holding a wheel, the attribute of Fortune, *rota Fortunæ*; (fig 3 and pl iv) Atargatis, the Syrian goddess, or Cybele (both riding in a chariot drawn by lions) or Isis, the Egyptian wife of the corn god Osiris, or Erigonē, daughter of Icarus (Babylonian *ikkaru*, the ploughman), to whom Bacchus gave the vine (*Ampelos*, the star *Proindemiatrix*, "early vintager," upon the shoulder of Virgo, often represented as a child holding a grape, carried by the Virgin) Sometimes she is called simply *Parthénos* (the "Virgin," daughter of Apollo the sun god and Chrysothemis "golden Law"—a telling name for the female holder of the Balance, *Libra*) Although a virgin, and therefore sterile, she gives birth to a child which she is seen holding (pl vi)

"*Hinc fecundus erit, quod mirum in virgine partus*" says Manilius (iv, 202) writing in the time of Augustus and Tiberius Whence the inscription in a pagan Græco-Egyptian calendar for the day of the winter solstice

"*Hēhou genethlion. hē parthenos tētoke, auxei phōs!*"

"Birthday of the Sun, the Virgin has given birth! The light increases!" and the note in the Persian and Arabic versions of the "Sphere" of Teukros of Babylon which describe the zodiacal sign of the Virgin as holding a child and says that the

Mount Eryx in Sicily, brought to Rome by Verres, excavated in the gardens of the Villa Ludovisi, now in Mrs Gardener's collection in Boston. In the scales is the god Adonis descending into the Underworld and ascending again, mourned by Aphrodite in autumn, welcomed back by the same goddess in spring time.

All this is duly explained by Macrobius. The Hermetic uranography, recently discovered in a British manuscript of the Harley collection by Wilh Gundel, actually describes the figures of Adonis and Aphrodite rising together with Libra. As to the winged male holding the balance on the Boston bas-relief, it seems to be Hermes (Mercury) smiling over Aphrodite's sad and gay moods of gratified and disappointed love, since the planet Mercury is believed to have his "exaltation" (below, p. 203) in the sign *Virgo*, sometimes thought to represent the she goddess Aphrodite.

As we should expect, the equilibrium symbol of the "Scales" represents measured justice and law. It makes men into legislators, judges, righteous rulers. Therefore it became the astral symbol of the Roman Empire, the creator of Roman Law. But it also makes merchantmen and butchers, using their scales, bankers and goldsmiths, weighing gold in the balance.

Where the holder of the "Balance" (*zugostates*) is represented as a bearded man, he may be *Hephaistos Vulcanus*, the patron god of Libra, supposed to have invented the balance, "*fabricata libra Vulcani*" (Manilius, II, 442).

According to the Roman astrologer Nigidius Figulus (above, p. 35) the Scales had been invented by a certain *Mochos Silphomachos*, "weigher of the silphion herb," is written above the figure of a king's clerk weighing bales of this precious plant on a black figured vase of Cyrene. Coptic *mache* is the ancient Egyptian word *maha(t)*, for "Balance", the Greeks call a lever *mochlos*, "little beam". The angel *Micha'el* holding the balance of judgment, weighing the souls is originally, nothing but the "God of the Balance," *Macha'el* (*Abatur* with the scales of the Mandaeans), vocalised by pious Jewish popular etymology *Mi ka'el*, "Who is like God?"

Simply because one of the Greek names of the Scales was *zugón*, "the yoke"—which meant nothing but the beam of the Balance compared to a yoke—Libra also makes people "under the yoke"—i.e., serfs and slaves, but also water carriers, because they carry two water jugs suspended from a yoke over their shoulders.

Egyptians explain it as the goddess Isis with the infant Horus, while others call her '*adra nedefa*, "the pure virgin," and her child '*Isu—i a*, Jesus (pl vi). The whole passage was well known in the Middle Ages to such authors as Roger Bacon, Albertus Magnus and the chancellor Richard de Fournival, who wrote a curious poem *De Vetula* and attributed its authorship to Ovid at the time when the zodiac of Nôtre Dame (pl x) was placed over the porch of that magnificent cathedral.

Abu Ma'shar, the ninth century A.D. Arabic translator of Teukros is actually represented (pl xi) as foretelling the birth of Christ opposite the poet Virgil equally holding a scroll with the words of the Fourth Eclogue, believed to announce the birth of the Saviour and the advent of the Golden Age, in a picture showing the Queen of Heaven on Solomon's throne, painted in the 14th century for a Westphalian nunnery (pl xi).

Hesiod seems to have been the first to interpret the celestial Virgin as "Justice" (*Dikē*), who had left the earth for heaven at the beginning of the Iron Age. Vergil in his fourth eclogue expects her to come down again as soon as the Golden Age returns in the course of the eternal cycle of æons.

For Manilius, Virgo is *Engonē*—"Born in the morning"—*i e*, rising heliacally. He describes her as a sort of schoolmistress—Sibylla, the prophetess—who makes people eloquent, scholars, stenographers able to follow the word with the pen—whence the Madonna, sometimes represented with the ink pot and the infant Jesus writing in a scroll on her arm. But although eloquent, and even loquacious (the ranting, prolix Sibylla), these people will be timid and shy—like a virgin or inexperienced girl.

The Scales (fig 7) Babylonian *zibanitu*, mentioned on the star dial fig 16 in the *Teshritu* sector in the middle zone, "the Balance," Greek *zugos*, the "yoke" of the balance which corresponds to Babylonian *gish rinnu*, "the beam of the balance" (Latin *Libra*) was invented in the second millennium B.C., when the stars, also called "the pincers of Scorpio," rose heliacally just before the sun at the time of the autumnal equinox—*i a*, at the time when the water dropping from the water clock (*clepsydra*) into the one scale of the balance all through the night weighed exactly as much as the water dropping into the other in the course of the day (*i e*, between sunrise and sunset). Firmicus (viii, 3) describes the Balance as being held by a male figure, as we see it on a bas-relief (pl xii) on the head piece of the sacred bed of the goddess Aphrodite on

Mount Eryx in Sicily, brought to Rome by Verres, excavated in the gardens of the Villa Ludovisi, now in Mrs Gardener's collection in Boston. In the scales is the god Adonis descending into the Underworld and ascending again, mourned by Aphrodite in autumn, welcomed back by the same goddess in spring-time.

All this is duly explained by Macrobius. The Hermetic uranography, recently discovered in a British manuscript of the Harley collection by Wilh Gundel, actually describes the figures of Adonis and Aphrodite rising together with Libra. As to the winged male holding the balance on the Boston bas-relief, it seems to be Hermes (Mercury) smiling over Aphrodite's sad and gay moods of gratified and disappointed love, since the planet Mercury is believed to have his "exaltation" (below, p. 203) in the sign *Virgo*, sometimes thought to represent the she goddess Aphrodite.

As we should expect, the equilibrium symbol of the "Scales" represents measured justice and law. It makes men into legislators, judges, righteous rulers. Therefore it became the astral symbol of the Roman Empire, the creator of Roman Law. But it also makes merchantmen and butchers, using their scales, bankers and goldsmiths, weighing gold in the balance.

Where the holder of the "Balance" (*zugostatēs*) is represented as a bearded man, he may be *Hephaistos Vulcanus*, the patron god of Libra, supposed to have invented the balance, "*fabricata libra Vulcani*" (Manilius, II, 442).

According to the Roman astrologer Nigidius Figulus (above, p. 35) the Scales had been invented by a certain *Mochos Silphomachos*, "weigher of the silphion-herb," is written above the figure of a king's clerk weighing bales of this precious plant on a black figured vase of Cyrene. Coptic *mache* is the ancient Egyptian word *maha(t)*, for "Balance", the Greeks call a lever *mochlos*, "little beam". The angel *Micha'el* holding the balance of judgment, weighing the souls is originally nothing but the "God of the Balance," *Macha'el* (*Abatur* with the scales of the Mandaeans), vocalised by pious Jewish popular etymology *Mi la'el*, "Who is like God?"

Simply because one of the Greek names of the Scales was *zugón*, "the yoke"—which meant nothing but the beam of the Balance compared to a yoke—Libra also makes people "under the yoke"—i.e., serfs and slaves, but also water carriers, because they carry two water-jugs suspended from a yoke over their shoulders.

The Scorpion (*Scorpius*, *Scorpio*, feminine *Nepa*, fig 26a) was known to the Babylonians as the female scorpion, the wife of the Archer, whom they represented as a scorpion centaur with a scorpion's sting projecting from the back of his animal body (fig 26b). The male and the female scorpion were



Fig 26a

supposed to guard the entrance to the tunnel through the mountain range in the North through which the sun was supposed to wander during the night from the place where it set in the evening to the place whence it rose in the morning. Gilgamesh meets them there, and finds them quite friendly creatures (fig 26a).



Fig 26b

For the Greeks it was the scorpion sent by the Earth (Gaia) or by Artemis to kill Orion for having too impetuously wooed the virgin goddess. (Whenever Scorpio rises, Orion disappears 'below the horizon'. Sirius, the 'brilliant star next to Orion, was supposed to be the "Arrow" star of a shooting goddess Sabit, seen on the planisphere of Denderah (pl. vi).)

Because of the purely accidental and imaginary comparison of the stars *gamma iota*, *zeta eta*, *epsilon* Scorpii with the curved poisonous sting of a scorpion, the constellation makes its children into fighters, gladiators, murderers, especially poisoners, bloodthirsty bourgeois (1), sword dancers, but also people who are fond of strategic games, battle pictures and war literature. The

reader will remember how conveniently for our newspaper prophets this poisonous insect appears in the horoscopes of our late main enemies Hitler and Mussolini (above, pl. n)

The trouble is that such a supremely humane and wholly admirable personality as Gœthe equally had the Scorpion in the ascendant, and that the gentle poet Horace, too—although, owing to the chaotic state of the Roman calendar before it was put in order by Julius Cæsar, he was not quite sure of it—may have been born under the same constellation

Also, although it will not please our star clerks drawing "dictatorial" horoscopes, there is no denying that *Scorpio*—a very slowly rising sign—forecasts for those born when it rises an extremely long life. We are happy to put on record that this did not come true in the case of Benito Mussolini. If Herr Hitler is still alive somewhere he may, thanks to his stars, enjoy his *incognito* for many years to come

According to Teukros of Babylon and Rhetorios, children of Scorpio have a dark skin and black eyes—as you would expect, if you remember that the scorpion is a dark brown or "black beetle." They have (or possibly had before they went bald) "woolly hair," are "proud and quick," but—*pace* Mussolini—they are "grumpy, although well intentioned" and have—of all things—"a weak voice." So it must have been someone else, not born under *Scorpio*, who impersonated those great thunderers when we heard them broadcast over the wireless. In particular, the second decan of *Scorpio*—which is in the ascendant of Mussolini and Gœthe—makes "laborious, intelligent, but obstinate" men who "live abroad"—here you have Mussolini exiled in Switzerland in his early days and Gœthe's famous Italian journey—are "destined for great things" (hear, hear!), but are "childless" (a good fit only for Hitler) and have "a body liable to be affected by disease." Gœthe was, indeed, several times seriously ill during his long and happy life, as most of us are from time to time

Now to the Archer¹ (*Toxotēs, Sagittarius, Arcitenens*). For the Babylonians, or rather their Sumerian masters, he was "the great lord *Pa bil sag*," the "overseer of the fire order." The principal, red glowing star in the heart of the constellation was believed to be a cave or pit (*hurru*), full of fire, the fire-ordeal consisting probably in walking over the embers in this pit. The "overseer" of it was thought to be an archer (*rabu* = Hebrew *rab*) armed with bow and arrow, two heads—a human one with a beard and an animal one of a dog or wolf

—and a crown and cap over both (fig 26) The human upper part of the body ends, centaur fashion in an animal body, half horse, half scorpion, with a horse tail and a scorpion sting

This forbidding creature did not please the Greeks, any more than it will appear congenial to our readers So they changed it into the more benign figure of a Greek centaur (pl v), explaining the constellation as the astral outline of old *Chirōn*—i e, “he who handles,” the “manipulative” surgeon and physician, the wise tutor and instructor of Achilles Some learned Greeks objected to this figure, arguing that the centaurs did not as yet know bows and arrows, fighting merely with clubs and stones So Cleostratus of Tenedos (sixth century B C) replaced the centaur by a two-footed Silenus, half man, half horse, shooting an arrow from a bow (fig 8)

According to Manilius, the “Archer” produces horsey men, tamers of beasts capable of disarming tigers, of calming raging lions and of “talking with elephants” This whole forecast is based on a mere confusion of the centaur shaped Sagittarius with the extra zodiacal Centaurus (pl v and fig 8), represented as holding in one of his hands a captured living “beast” (*thērion*), variously interpreted as a tiger, a panther or even a lion Children of Sagittarius are “vigorous men,” of “sure, sharp eyes”—i e, born archers—and of “a steady heart” They have “a sharp, mobile and untiring mind” Sometimes they become “charioteers, horse tamers and shepherds,” even “physicians” (because of Chiron!)

A most curious creature is “the Sea Goat” (*Aīgo kerōs*, *Capricornus*—fig 19 right side end and fig 8) The Greek and Latin names are translations of the Babylonian *qaran enī*, “horn of the goat,” the particular name the Mesopotamian star clerks gave to *Gamma* and *Delta Capricorn* Our “Sea Goat” (*æquoris hircus*, *æquoreus caper*, *pelagi capella*, *piscinus caper*) described in the Greek poem *Sphaira* as “a goat with a fish tail,” is a translation of the Sumero-Babylonian *suhur mashu*, written with two cuneiform signs, the one meaning *urusu*—“young goat,” “kid,” the other *HA* or *kua*—*nunu*—“a fish,” the whole meaning “goat fish” The composite sign for *suhur mashu* (fish) shows a “container” with a “young one” inside—i e, a viviparous fish A “goat fish” obviously means a fish looking as if it had goat’s horns Now, there is a viviparous gigantic fish with head fins looking like horns (fig 27a, right) and therefore called by zoologists *Dikerobates*, “walk



PLATE X

The Artisan, ' Babylonian *nangaru* and the Constellation of the Crab in the Zodiac of the main porch of Nôtre Dame de Paris A.D. 1312 (after Charles Dupuis *Origines de tous les Cultes*, Paris 1792 pl XVIII)

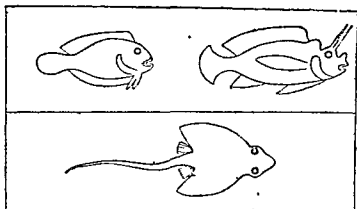


Fig 27a

ing about with two horns" in the Red Sea and the Persian Gulf, called in English "the eagle-ray" (a stuffed one from Mascat in Arabia may be seen in the South Kensington Natural History Museum). This and another "horned" fish are represented on an Egyptian bas-relief (fig. 27a) showing Queen Hatshepsowet's ship sailing to Punt (=Greek *Opōnē*=*Hafun* in East Africa). Capricornus is correctly shown as a "horned



Fig 27b .

fish" in the zodiac on the ceiling of the temple of Bel in Palmyra (fig 27b) The Babylonians, who got the name of this constellation from their seafaring neighbours on the Carmanian coast (above, pp 77 ff), but had never seen the beast, pictured it simply as an animal half goat, half fish (fig 27c) This is the symbol handed down to the Greeks and Romans, and through them to the Arabic and medieval and later European astronomers.



Fig 27c

The Babylonian astronomers placed this sign in the "wheel of Ea" (above, p 28) the god of the ocean Because this god was supposed to be the patron of all metal workers—presumably because the art of the copper- and bronze-workers had been brought to Mesopotamia by an immigration of settlers from overseas—the Greeks and Romans placed the goddess of the hearth fire (*Vesta*) in *Capricornus* Therefore the "Sea Goat" produces "fire workers, stokers, metal foundrymen, silver- and goldsmiths, iron- and bronze casters, miners, bakers," but also "clothes-makers and dealers" (because of the goats' hair cloth made in Asia Minor and because of the verbal assonance of *Vesta* and *vestis*, "vestment")

Because the constellation is composed of a caprine head and a piscine tail, people born under this sign will be inclined to capricious capers in their youth, but will cool down to a colder fishlike temperament in old age—a forecast which is likely to fit most people born under any sign, except the few unfortunate exceptions who develop in the reverse direction The caprine part in the ascendant predisposes to crimes of passion caused by erotic complications, because the goat was supposed to be a particularly lascivious and specially aggressive animal, and notwithstanding the fact that the original "horned fish," the eagle-ray, uses its head fins exclusively for the harmless purpose of fanning plankton into its mouth

The "Man who Bears the Watering Pot" (*Hydrochoos*, *Aquarius*, the "Urn" itself is known as *Hydria*, *Urceus*) was for the Babylonians and Egyptians (fig 27d) a giant (*rabu*), a mountain and river god with two urns, pouring out the Euphrates and Tigris or the Blue and White Nile from his two jugs The Greeks had not much use for either of these river gods So they explained *Aquarius* as *Deu kal ion*—i.e., the "son of *Deukalos*, the beloved one of Zeus," the hero of the

Greek deluge story—pouring water mixed with honey or wine from two jugs into the rift of the earth into which the flood had subsided. Or they saw him as Ganymedes, the cup-bearer and beloved play boy of Jupiter or as Cecrops of Athens, pouring out water for the gods, or as Aristæus, the bee keeper and honey maker of Cyrene.

The children of *Aquarius* become "water diviners, well builders, hydraulic engineers, constructors of aqueducts" or "bridge-builders" or "clock makers" (because the ancients used dripping water to measure the flow of time by means of the clepsydra). Also "they spend their income like water, never getting rich or poor"—a very enviable lot! What a pity that we cannot all be born in January!

As to "the Fishes" with their "glittering tails" (*zibbati*, above, p. 48) the Babylonians saw them bound together with a "band of the fishes" (*nîkis nunē*), the one being *sinuntu*, "a swallow fish" (*trigla hirundo* (pl. XIII, fig. a), the other "the star of (the goddess) *Anuntu*"—i.e., "the heavenly one" (our Andromeda), pictured with one fish between her legs (fig. 21), one across her breasts (plate XIII b). The Babylonians had a goddess Ninua—the patron of Nineveh—whose name they wrote with a composite sign meaning "house of the fish". The Greeks of Syria interpreted the group as the Syrian goddess *Derketo* (*Atargatis*) with her son *Ichthus* (= "Fish"), a name interpreted by the Christians as *I(ēsous) Ch(ristos) Th(eou) 'U(ι)os s(oter)*—i.e., "Jesus Christ, Son of God, Saviour"—while Andromeda was interpreted by Greek popular etymology as *andra me eide*, the virgin who "knew no man". Pursued by the monster Typhon (seen in the constellation Cetus threatening Andromeda—fig. 8) Aphroditē and her son were believed to have jumped into the Euphrates (the Egyptians told the same story about Isis, Horus and the Nile), both being changed into fishes and finally transferred to the celestial Nile or Euphrates, like the "Woman with the Child" in the Revelation of John (XII 3) is threatened by the "Red Dragon," the Babylonian *mush rushu*.

Children of *Pisces* naturally become "water men, fishers"—the "band of the Fishes" was believed to be an angler's line (*linon*)—"fish mongers, skippers, pirates, naval men from galley-



Fig. 27d

slaves to admirals, ship-builders, ship owners Because sea captains must know a lot of nautical astronomy to be able to steer by the stars, those born under the "Fishes" may become "astronomers and builders of celestial globes, geographers and meteorologists"

Because of the mythological connection of the "Fishes" with the goddess Aphrodite, these people will be "voluptuous philanderers as mobile as fishes, fond of pleasures, most fertile, of course, like their freely spawning prototypes Because the fisher decoys and deceives the fishes and the pirate overpowers his victims, those born under the "Fishes" will be "unscrupulous talkers and liars"—a curious "astral logic," considering that fishes are mute creatures!

It makes, of course, a considerable difference whether the zodiacal signs in question stand in the ascendant (or "horoscope" proper) or in any other "corner" (*kentron, cardo*) of the sky (I say "of course" with reference to the infantile logic of the star gazer) In reality the varying position of these stars means nothing but that the rays of light coming from them strike the surface of the earth at varying angles But since the child is not necessarily in a horizontal position, stretched out from East to West, either when about to be conceived or when about to be born, mother and child would in any case be struck by the star rays at angles determined primarily by their own position, and it would make all the difference in the world whether that position was vertical or horizontal, etc

Still, placing ourselves upon the intellectual level of people who are unable to draw all the logical consequences from their own assumptions, we can understand that the star just rising might be supposed to determine the early years of the child while the culminating star could be thought to direct the mature years, and the setting one the declining years (above, p 42 f)

This thought is elaborated in the fifth part of Firmicus Maternus' manual The book learned Sicilian senator is so ignorant as to believe that when *Anes* is in the ascendant *Capricornus* must be in Mid Heaven, *Libra* in the descendant and *Cancer* in Lower Mid Heaven (a theory which rests on an inability to distinguish Right Ascension from Oblique Ascension and proves the archaic character of the system which had been obsolete for hundreds of years when Firmicus still went on retailing it) The following quotation will illustrate the state of mind of an author who could lay down such rules

"I shall now explain the destination of *Anes* as the horo-

scope star and the influence of the three corresponding constellations (*Capricornus*, *Libra*, *Cancer*) in the other corners *Aries* in the ascendant decrees most of what happens throughout man's youth *Aries* denies brothers or, if there are (already) many brothers, allows only one of them to survive" (presumably because ancient herds consisted of a number of ewes with one ram only, other males being castrated for fattening purposes) "*Aries* weakens the new born child by intensifying a certain infantile secret vice Hate will always follow his name" (because rams are quarrelsome animals compared with unsexed wethers) "His inheritance does not remain in the same state, it is alternately scattered, alternately collected again" (because sheep are periodically shorn of their wool and grow it again) "Some people like the generosity of the *Aries*-child" (willingly yielding the wool, even of the golden fleece) "others dislike his magnanimity He distributes his benevolence to ungrateful people and he never earns the proper thanks of due gratitude" (the sheep and the sheep-shearers) "He will be of a variable nature, plagued by headaches" (because *Aries* is *caput anni*, the beginning of the year, and therefore supposed to rule over the head of microcosmic man (below, pp 249 ff and above, fig 23) "*Capricornus* in Mid Heaven decrees the honours of lasting glory It moves many men to offer their flatteries to the man born under this constellation He will preside on certain official boards and be chairman of academic corporations, provide many people with their livelihood" (the wool of the Ram and the goat's hair of *Caper*, not to speak of mutton and kid's meat) "He will personally administer other people's estates" (the goat leading the herd), "he will make many inventions of things in daily use" (*Capricornus* is the patron of metal workers, above, p 106) "The secrets of the mystery religions are revealed to him, he enters into the secrets of heaven" (because the secret pass-word of the Orphic initiate is "As a kid have I fallen into the milk"), "provided that the planet Mercury casts his rays upon this place in heaven or is found standing there" (there are Roman catacomb paintings which show the caduceus of *Hermes Psychopompos*, "guide of souls" combined with the kid jumping into the milk—i.e., the Milky Way)

If the "third place" (above, p 39) which determines "career" is in *Libra*, this constellation produces "a life spent all through at the court of the king or in public office" (that is

to say, the man will be a lawyer administering justice and holding the balance even between the parties) "His life will show strong oscillations" (as the beam of a balance oscillates), "good luck will follow bad luck, riches, poverty, sky high elation to the highest dignities will succeed deepest depression, bitter and ignominious humiliation. Always envy will dodge his path" (the weigher righting the balance by putting in weights), "darkening his shining glory, especially if his horoscope is devoid of the trigonal aspect (below, p 217) of Jupiter. *Cancer* is always in the Lower Mid-Heaven when *Anes* is in the ascendant" ($\pi\epsilon'$). It produces "famous people, decorated with crowns" (because of the neighbourhood of the constellation *Corona borealis*). "If Jupiter looks at this place" (Lower Mid-Heaven) "from the horoscope (ascendant), statues and portraits at the expense of the public treasury will be decreed to people born under such stars. But people of their own family will be their enemies. Such people can be recognised by their untended, dirty and uncut hair" (the influence of the Ram and the Goat), but they will always have an "abundance of things necessary for their day-to-day life" (the wool and the meat of sheep and goats), "especially if Jupiter stands in one of the corner houses of this nativity."

In the same childish and yet pedantic way the influence of the zodiacal signs is discussed in further groups of four, 90 degrees distant from each other on a circular paper diagram or planisphere, regardless of their respective Oblique Ascension always on the basis of purely mythological associations of naive ideas about the wholly arbitrary, traditional constellation figures and names, proceeding by logical jumps in fits and starts to a pseudo-scientific systematisation of "such stuff as dreams are made on."

XV

PRECESSION OR OSCILLATION OF THE EQUINOXES?

THE simple forecasts based on the relation of the "horoscope" or "ascendant" to one of the twelve "zodiacal constellations," as it could be deduced without further ado and without any calculations of astronomical tables from the mere knowledge

of a man's birthday, were the main stand by of the vulgar, itinerant star-clerks touting for clients in the market-place. They must have operated in the same way as their modern colleagues. Prof. Wilhelm Gundel († 1945 1/11) of Giessen, who dedicated a life's work to the elucidation of ancient star-lore and never lost an opportunity of consulting any one of the numerous modern astrologers advertising their goods by means of street-posters or in the daily Press, described their practice in the following way:

"As soon as you tell them the date of your birth—the day, month and year are sufficient, hours or minutes are not asked for—you get, sometimes after certain impressive preliminaries, a printed or typewritten and multigraphed 'horoscope,' predicting from the zodiacal sign in the ascendant on that day, a hotch-potch of agreeable and disagreeable events, exactly on the traditional lines as quoted above from ancient astrological texts—the style being just as ambiguous and liable to misinterpretation as in the classical sources. As often as not these star mongers will resort to the criminal expedient of frightening their credulous client by threatening him or her or their next relatives with death or serious disease in a certain year of life, suggesting at the same time that a more thorough-going and, of course, more expensive analysis of the position of the planets, etc., on that day and at the particular hour and minute might enable them to rectify or 'correct' his terrifying prophecy."

Quite probably the ancient "Chaldeans" and "Egyptians" fishing for clients at the approaches to the Circus Maximus employed the same sort of refined psychological blackmailing technique. But they could at least claim in good faith that the zodiacal constellations to which they attributed such an overwhelming influence upon the lives of their victims did actually look down upon them at the day and hour in question from the respective angles of the sky.

To-day however, the situation is entirely different. Owing to the slow, secular wobbling movement of the earth's axis (see above, p. 73, fig. 9), the points of intersection between the ecliptic and the celestial equator (fig. 5)—*i.e.*, the equinoctial points of the sun's apparent orbit—are travelling all round the circle at the rate of about 30 degrees in two thousand years (fig. 19). This was known to the Greeks, since Hipparchus gave a correct

theoretical explanation of the facts, which seem to have been observed by the Babylonians a considerable time before he did so. The famous astronomer Ptolemy—Claudius Ptolemæus of Alexandria, the author of the so-called Ptolemean world system (below, p. 244)—who observed the stars from A.D. 121 to 151, and who knew that the so-called “tropical points”—solstices and equinoxes—were gradually wandering away from the zodiacal constellations originally connected with them, nevertheless wanted to explain what he called the “natural” character of the zodiacal signs with reference to their position relative to these tropical points. In order to give a permanent character to these relations which played such an important part in his astrological theory, he hit upon the perfectly arbitrary expedient of separating the “real” zodiac, represented by the zodiacal constellations constantly and slowly shifting their places relative to the “tropical points,” from a purely fictitious zodiac bound to the tropical points, and therefore rotating with reference to the belt of fixed stars through which the sun, the moon and the planets appear to thread their way.

This is a perfectly legitimate procedure in so far as it introduces a convenient system of reference invariant with respect to the tropical points—*i.e.*, with reference to the seasons of the solar year, which is still used by modern positional astronomy, and can be seen surrounding every modern celestial globe. But instead of numbering the twelve empty parts (*dōdekamōna*) of this circle of 12×30 degrees with neutral numerical signs—*e.g.*, the letters of the Greek alphabet—Ptolemy preferred to call them by the traditional names of the constellations which appeared to be situated in these twelve sectors at the time when these names were given to the constellations. The Græco-Egyptian marble “planisphere Bianchini” (plate viii) found on the Aventine hill in Rome A.D. 1705 (above, p. 82) shows the two zodiacs—the “fixed” one and the “moving” one—coinciding as they were supposed to have been at the time of the alleged creation of the world—the so-called *thema mundi*.

All the alleged influences which the stars themselves, or rather their imaginary configurations in the shape of a ram, bull, lion, crab, goat, fish, etc., were said to exert on the fate of man (above, pp. 89-109) were now transferred, with an audacious arbitrariness without parallel in the history of pious fraud, to these homonymous but wholly empty sectors of a mere circle of reference (*noēta zōidia*—*i.e.*, “conceptual animal figures”).

Theoretically, Ptolemy admitted the flaw in the argument

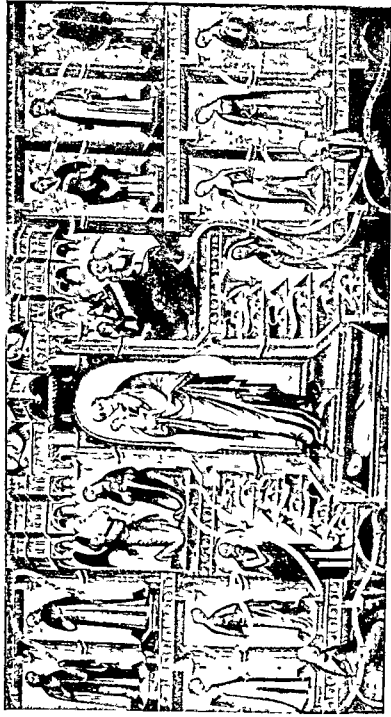


PLATE XI

The Astrologer Albumazar and the poet Virgil foretelling the birth of the Christ Child right and left of the Virgin Mary on the Throne of Solomon West-German 14th century painting in the Kaver Friderich Meister Berlin (After Kurth Rabe *Mitteilungen der Gesellschaft für Kunstwissenschaft*, Nr. 1, p. 22)

(*Tetrabiblos*, II, 21), but in his practice he took not the slightest account of this difficulty, which is obviously one of the most decisive arguments that can be levelled against the whole basis of horoscopic divination.

Suppose that a credulous devotee of astrology swallows wholesale the theory that people who have "the Ram" in the "ascendant" and "the Goat" in the "descendant" can be recognised by their "uncouth, dirty hair" (above, p. 110). Suppose he is willing to admit that the stars exert an "action at a distance" of this sort on man's body and soul as readily as I should admit that the sight of a beautiful lady sitting in her box in the theatre just opposite my own seat might possibly exert a powerful influence on me—a comparison which I borrow, with due acknowledgements, from Aristotle. But would he be as willing to believe that the empty sector of the ecliptic in which the Ram and the Goat had appeared to stand two thousand years ago can still exert the same influence upon him because these "places" have been "saturated with the astral forces" of the said constellations during the thousands of years they stood "in them"? Or would he feel as I should if somebody tried to persuade me that my heart beats could still be quickened by the sight of an empty box in Covent Garden Theatre where Mrs Keppel sat on a certain first night in the reign of King Edward VII?

And yet you can find in most modern text books of astrology the absurd assertion that the twelve sectors of the ecliptic have been "charged like accumulators" with the "powers" of the homonymous groups of stars which have "dwelt" for so many centuries "in them", that they now act like "dynamic fields" emitting inexhaustible streams of the specific astral energies which they have previously absorbed. Let us suppose that their readers are credulous enough to believe such nonsense (and indeed there is no limit to the gullibility of a certain type of "occultist" mind), how can they cope with the patent fact that the sectors of the zodiac where Aries, Taurus, etc., once stood are not empty now, but are occupied by the real constellations following "in the order of precession"?

If it is conceivable that the sector in which Taurus stood two thousand years ago can still impart "Taurine" qualities to children born or conceived when this sector was just rising above the horizon, why is this "Taurine" influence of a constellation which is no more there—i.e., of a pure memory image—not overwhelmed by the quite different influence of the stars of

Aries, which *are* actually there now, for everyone to see? Or why at least do not the "bullish" and the "sheepish" influences somehow combine producing hybrid "Taurino-Arietine" cross bred children? Or if past and present influences can thus intermingle, why take into consideration merely the "astral powers" accumulated in the respective sectors during the last two thousand years? Why not go back another two thousand, four thousand, six thousand, etc., years (fig 19), until we have wandered around the whole circle in 25,800 years, and thus get the whole astral stew thoroughly stirred into a homogeneous "field of power"?

Can there be a single intelligent person—the others are, of course, ineducable—who does not see that the theory of the fatal influence of the "empty" sectors of the "fixed" purely geometrical and conceptual zodiac—disregarding the "real" constellations—is equivalent to a direct denial of the basic theory of astromancy? How can the stars be thought to influence man's fate, if the influence of the real stars in their actual position is methodically ignored in favour of the alleged wholly mystical action of the twelve sections of an empty spherical reference system? Is it not obvious to anybody who has his wits about him that these twelve "zodiacal" signs—once they are distinguished from the twelve zodiacal constellations—are nothing more than the twelve sectors of a circular dial, introduced for the purpose of dividing the solar year into twelve approximately equal calendar "months" when it was noticed that the "seasons" of the solar year did not coincide with the "quarters" of the sidereal year measured by means of the old "star calendar"? Is it not transparent that the expedient introduced by Ptolemy about A.D. 150 plays havoc with the basic claim of astral divination, asserting that the qualities of the stars were either revealed by a divinity at the beginning of time (above, pp 70 f) or have been discovered by the accumulated experience of untold myriads of years? How could people discover the fatal influences of the empty *dōdekamōrion* called "Aries" in the two millennia when the stars of the constellation Aries stood in it and would naturally be credited with all the influences emanating, *ex hypothesi*, from the empty sector of space in question? And if they did discover such a profound occult truth, why did they not write it down on the cuneiform tablets teaching astrology composed about 2200 B.C.? Shall we be told that this great secret was kept for the inner circle of initiates when we actually know, from the

colophons of the astrological tablets once in Assurbanipal's library, now in the British Museum, that these very documents *were* the esoteric wisdom which the "non initiate" (*lâ-mudu*) was not allowed to read?

It is most amusing to observe how an up-to-date and modernist astrologer like Mr Rupert Gleadow—a real M A Oxon, if you please¹—glides, or rather skids, over the thin ice of these difficulties by explaining to his fashionable public that the modern star rede does not any longer attach any importance to the "fancied" resemblances of certain groupings of stars, to the image of a lion, ram, bull or crab—a belief, by the by, which was cherished by the great astrologers of antiquity, the revered "old masters" whose divinely revealed wisdom is exalted whenever it suits the feeble modern epigone's book! He criticises "the belief that the signs were named after the constellations with which they once coincided and that the constellations were so named because of certain fancied resemblances" "It is absurd to pretend that the signs were named solely (¹) after fancied resemblances. It is more probable, since their influences had been shown experimentally (¹) to be real, that the signs were named symbolically (¹) after the effects they were found to have and the names later became attached to the constellations" (¹¹)

What a pity that the exact contrary of this "probable" explanation has been conclusively proved by a mass of historical evidence which the modern astrologer persistently ignores!

For Mr Gleadow, as for all his forerunners, since Ptolemy hit upon this pseudo-scientific theory, it is the connexion of the zodiacal signs with the "four elements" that matters and that invests them with such power over us. That "elementary nature" of the zodiacal signs is, according to Ptolemy, determined by their distance from the tropical points. This means that the hot and fiery nature of the "Lion" is caused by the fact that this sign corresponds to the hottest month of the solar year, following immediately upon the summer solstice, while the cold and watery nature of the "Fishes" just "opposite" is due to their proximity to the winter solstice and their correspondence with the coldest month of the wet winter season.

As a matter of fact, these two most obvious "correlations" have been taken as the starting point for the division of the twelve parts of the zodiac into four "triangles" (*trigona, trianguia, triquetra*) corresponding to the four elements (fig 28) *Leo, Sagittarius, Aries* being classified as dry and fiery signs,

Taurus, Virgo, Capricornus as cool and earthy ones, *Gemini, Libra, Aquarius* as warm and airy, *Pisces, Scorpio, Cancer* as moist and watery ones

How irrational the basis of this system is, will immediately be seen by the reader who remembers that in the Southern

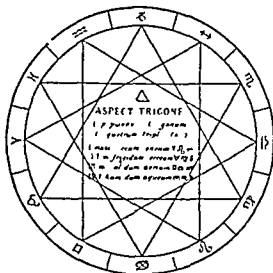


Fig 28

hemisphere the hot and dry summer takes place when the sun is in *Pisces*, the cold and wet winter when it is in *Leo*. So an Australian Ptolemy would have made *Leo* into a watery sign—as the Egyptians actually did, because the inundation of the Nile reached its climax when the sun entered *Leo*. Indeed, we are told that this is why open mouthed lions' masks are so often used as fountain heads. Conversely, an Australian would have made *Pisces* into a fiery sign, remembering, presumably, the fishes in the "Thousand and One Nights" which jumped from the frying pan into the fire. The "astral logic" of such a procedure would not have been more absurd than the procedure of his Northern colleague, who classifies without so much as an augur's smile the "Sea Goat" with its conspicuous fish tail as an "earthy" animal, leaving the poor thing stranded high and dry on the northernmost corner of the *trigonum terreum*. One can understand that *Taurus*, i.e., the Bull dragging the plough, and *Virgo* carrying the Corn Ear (*Spica*), should be connected with the earth. But the "Sea Goat" classified as "earthy" is as absurd as *Aquarius*, the Waterman with the

Watering Pot, being qualified as an "airy," not a watery sign! One can understand the "Lion" with his yellow pelt, golden mane and "hot temper," or the "Archer"—the old Sumerian *Pa bil sag*, "Overseer of the Fire Ordeal"—being connected with fire. But where is the sense in describing the peacefully reclining Ram as a "fiery" animal?

In the original Babylonian system the sign of the summer solstice *Leo*—and with equal consequence *Cancer*, called *nangaru*, "the artisan" or "smith"—were connected with fire, *Pisces* and the "Sea Goat" and the sign *ihu*, "irrigated field" or "water ditch," below our *Aries*, with the waters of the ocean-god *Ea*, *Libra* and the *Pleiades*, described as the Bull's tail brush (*sappu*) opposite *Libra*, with the equinoctial storms raging at these times of the year.

Later on the Greek mystics who claimed to have received their wisdom from the prophet, poet and star gazer Orpheus evolved a theory—possibly derived from a Persian source—explaining why the passage of the sun through the various parts of the zodiac produced the varying "climates" of the four seasons. While the modern physicist and meteorologist knows that these variations are due to nothing but the varying angle at which the rays of the sun strike the surface of the earth, the mythic "Orpheus" is said to have taught that there are four celestial streams, one of water flowing out of the urns of *Aquarius* and mixing its water with that of the constellation Eridanus oozing out from under the feet of *Orion*—the *manneken piss* of the Greek star map—one "river of fire," the "fiery stream" of Daniel vii, 10, to wit the Milky Way, one of wind, and even one of earth, out of which meteoric showers of stone and sand storms were supposed to be rained upon the earth. If the sun, or the moon and the planets, passed through the fiery zone of heaven, they were supposed to become so incandescent as to radiate intense heat. If they passed through the watery region they were supposed to become so thoroughly drenched that they would exude upon the earth streams of liquid "outpourings" (*aporhoæ, influentiæ*). Passing through the "earthy" region, they would rake up and spray the earth with dust and stones, hurrying through the "airy" zone, they would drive before them like a speeding carriage gusts of wind disturbing the atmosphere.

But it is not only the weather that they will determine in the course of their passage through the fiery, watery, airy and earthy zone of heaven. The primitive "organic chemistry"

"ridicule the attribution of one of the four elements to each zodiacal sign without troubling to find out what it means" (1)
 "They know that, according to Aristotle" (read Empedocles!)
 "all substances contain in different proportions these four elements. They know also that Aristotle was one of the most intelligent men who ever lived. Yet they have no hesitation in declaring that this theory is all nonsense! Such naivete is really astonishing. But Aristotle was no such fool as his critics" (1).
 He meant, of course (1), that all substances contain in various proportions the four elementary qualities of fixity" (read solidity) " (earth), liquidity (water), fluidity (air)" (is water not fluid?) "and radiation (fire), and this is true even for radioactive bodies of which Aristotle presumably knew nothing"

"In astrology the interpretation is analogous. The fiery signs give a passionate, impassionate nature—a warm or even radiant personality. The earthy signs are rather cold, separate, practical. Air is intellectual (h'm!), "the permeating mind" (because primitive people identify the so-called "spirit" of man with his breath), "water is emotional" (because we shed tears when we are sad and exude sweat when we are terrified). I doubt whether that is the elementary physics they still teach and the Aristotle they still read in Oxford, but it is certainly what one could get printed and published in London in 1940

Anyhow, it will be news for the astrophysicists working long hours at the Oxford University Observatory that the three aggregate states—the solid, the liquid, the gaseous—in the abstract, and radioactivity to boot—could be observed in a curiously regular, discontinuous distribution throughout the twelve sectors of the ecliptic (fig 28), if the observers would only trouble to look out for these "primary qualities," instead of relying stubbornly on such assumptions as what is known as "Einstein's cosmological principle," postulating that "all places in the universe are equivalent"

But we must not devote too much of our strictly limited space to these desperate modernist attempts to impart a superficial appearance of scientific rationalism to the stale remains of what was once the grandiose mythological and cosmological background of a contemplative pantheistic religion of star worship

It is much more interesting to record the far more effective reply of the Neo-Platonic devotees of astrology to Hipparchus' theory of the precession of the tropical points which demolished so obviously the essential foundations of all divination based

of the ancient Ionian and the classic Greek and Roman philosophers which taught that living bodies were composed—in various proportions—of the alleged “four elements,” water, fire, air and earth, eventually—according to Aristotle—in combination with a “fifth essence” (*quinta essentia*), the radiating “light stuff” or “ether” (Greek *athēr*, lit “shiner”), was the basis of the belief that the proportions of the “mixture,” the *temperamentum* of the four elemental components of the body were determined by the position of the star from which the individual soul had fallen (above, pp 65 ff) relative to the fiery, airy, watery or earthy zone of heaven.

The Lion at the summer solstice, being a “fiery” animal would naturally be believed to exert a very different “influence” on the “temperament” of a child born while this sign was “in the ascendent” or “culminating,” from that of *Aquarius*, “the man who bears the watering pot” *Aries*, the equinoctial sign of the stormy spring season, would be thought to produce rather “windy” or “flighty” creatures, very different from the heavy “earthy” individuals born under the sign of the Bull plodding before the plough through the celestial furrows.

This is the real, historical basis—devoid, of course, of any connection with what we know now about the universe—of the still prevailing belief in a systematic correlation between the (imaginary) “signs of the zodiac” and the alleged “four elements,” introduced as such into ancient physics by Empedocles of Acragas and the “temperament” (*i.e.*, “mixture”) of human souls entering the world when certain of these signs are rising, culminating or setting.

Aristotle—who bequeathed his rather primitive physics to Ptolemy—accepted this Pythagorean “four fold” (*tetrakty's*) of “elements” from Empedocles, but reduced each one of them by an analysis, the purely psychological and phenomenalist character of which is obvious to the modern reader, to a combination of two “qualities” hot cold, dry-wet. The pair “hot plus dry” is equated with “fire”, “hot plus moist” is supposed to yield air (“hot air,” I presume), cold plus dry = earth (dry as dust, obviously). These are all the possible “combinations,” since hot and cold, dry and wet simply cancel out each other in due proportion.

Our readers will be interested in what our modern astrologers get out of their Aristotle. They seem to use an edition inaccessible to common mortals. At least Mr Rupert Gleadow says—after a bitter complaint against the persons who presume to

"ridicule the attribution of one of the four elements to each zodiacal sign without troubling to find out what it means" (1)
 "They know that, according to Aristotle" (read Empedocles!)"
 "all substances contain in different proportions these four elements. They know also that Aristotle was one of the most intelligent men who ever lived. Yet they have no hesitation in declaring that this theory is all nonsense! Such naivete is really astonishing. But Aristotle was no such fool as his critics" (1)
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on a system of "zodiacal signs" Just as the Holy Inquisition tried to maintain unimpaired—against Copernicus and Galileo—the geocentric theory of the sun turning round the earth because it is so manifestly presupposed in the Scriptures, Neo-Platonists like Proclus simply denied the precession of the equinoxes, because the "divine Plato" had ignored it If such a movement existed, they said, the Chaldeans whose continued observations extended over "countless times and even whole world periods" (below, p 159) would have noticed it

Now, the fun of it is, that the Babylonians can actually be shown to have been very much alive to the facts in question they had noticed—apparently with some anxiety—that constellations formerly observed in one of the three "wheels" of Enlil, Anu, Ea (above, p 28) had gradually moved into another, and that the stars had, as it were, got into disorder They actually shifted the tropical points twice, from the fifteenth to the tenth degree and—at the time of the famous Kidinnu (*Kidinnu*) quoted by Hipparchus—to the eighth degree of the twelfths of the ecliptic

But they seem to have entertained a pious hope that things would come right again in the long run Some astronomers, probably late Babylonian star clerks of the Persian period developed a theory that the shifting of the equinoxes was an oscillatory movement When Hipparchus—merely for the sake of convenience—shifted the tropical points to the beginning of the first degrees of the respective ecliptical sectors, the half educated Greek astrologers of Egypt seem to have misunderstood this procedure as implying that eight degrees in one direction and eight degrees in the other was the maximum amplitude of this oscillation, the resulting sixteen degrees being equal to the breadth of the zodiacal belt This oscillation—known to European astronomers until the time of Tycho Brahe from the Latin translations of certain Arabic star clerks as *trepidatio*—was called by the Hermetic astrologers *neusis* (*nutatio*), a term which is now used to denote a slight wobbling movement of the axis of the earth due to the gravitational attraction exerted by the moon, discovered in A.D. 1727 and explained in 1748 by the Rev James Bradley of Oxford

This "nodding" of the celestial axis away from and back to its "correct" initial position was apparently connected with the deterioration of the state of the world in the later periods following upon the initial golden age The expectation that the position was then just about to be righted and the golden



PLATT VII

Adonis rising and descending in the scaly held by Hermes Venus mourning and rejoicing Headpiece from the Parthenon of Aphrodisias on Mount Prius in Scythia now in the Gardner Museum Boston Courtesy of the Dumbarton Oaks

age about to begin is expressed in Virgil's famous *Fourth Eclogue* (40 B C)

*Adspice nutantem convexo pondere mundum
Terrasque tractusque maris cælumque profundum
Adspice venturo lætantur ut omnia sæclo*

See this world nodding (back) with shifted weight
The lands the stretches of the sea and the deep sky,
See how all things look forth with joy to a new age!

This passage must have been perfectly well understood by the Renaissance scholar who commissioned Giorgione (d A D 1510) to paint "The Three Philosophers"—now in the Vienna Museum—a picture inspired by the "Prophecy of Seth" quoted in an unfinished Latin commentary to the Gospel of Matthew (*Opus Imperfectum in Evangelium Matthæi*) and showing the three Magi from the East observing from the cave on top of the "Victory Mountain" (*mons Victorialis*)—the present Koh-i-Kwaga on the shore of lake Hamun—the heliacal rising in the morning dawn of the star heralding the birth of the Messiah. For one of the "philosophers" or Magi carries a parchment with an astrological chart which displays prominently a diagram of the loops in the apparent orbit of Jupiter and, below it, the cog wheel with numbered cogs imagined by the Arab astrologer Tebit ibn Qurrah (836 901 A D) for the purpose of explaining the *trepidatio* or nutation of the world's axis (pl III a, III b cp fig 9, pp 73 f)

Plato seems to have heard this theory in his old age, from the "Chaldean guest" to whom he gave hospitality, and to have used it in the strange story about the creator god making the world revolve in the right direction until he got tired and let it go, when it began to turn backwards in the opposite direction, like one of those contraptions (*rhomboi, iunges*) consisting of a round disk with several perforations strung upon two or three threads which abandoned girls used as a love-charm by turning the disk in one direction until the threads were sufficiently contorted to make it spin backwards in the opposite sense when the threads were held tight, thereby causing the unfaithful swain to return to his deserted sweetheart. While the god as the *primum movens* is turning the world in the proper direction, everything is all right, and we live in the "golden age." While, however, the prime mover (fig 1) rests from his exertions and the world is left to its own contrary movement, everything goes from bad to worse and we live in the iron age, until by the grace of the rested divinity the movement is reversed again in the right direction.

as if the apparent angular velocity of the fixed stars were not absolutely equal for all of them, while the apparent distances travelled in the unit of time are, although shorter for the stars north of the ecliptic belt, yet considerably longer for those south of it—as anybody can see at the first glance by looking at the photograph of “The Rotating Dome of the Sky” in Sir James Jeans’ *Stars in their Courses*, pl I

As a matter of sober fact the movements of all stars—excepting meteors or “shooting stars”—are too slow to be noticed by direct observation, and rapid enough to be easily perceived by means of simple sighting and timing instruments (figs 17a and b), regardless of whether we observe the most southern stars visible over our horizon or those nearest to the pole

The fact that modern astrological practitioners disregard the extra zodiacal stars has nothing to do with the slowness of their movements, but everything with the slowness of mind of the wizards who want to serve a maximum number of clients in a minimum of time, and therefore find it more expedient to look up a limited number of “positions” in their ready made tables than to observe the real stars which are invisible most of the time from the newspaper offices or private dens where they ply their piteous trade

At the time when star divination was practised by sincere, albeit uncritical and credulous worshippers of the Host of Heaven, the extra zodiacal stars “rising together” with the twelve “signs of the zodiac,” their so-called *paranatellontes*, were most carefully observed and included in the detailed interpretation of the star map representing the position of the celestial sphere above and below the horizon at the moment of the respective birth or conception

One of the oldest astrological oracles extant in Greek is the assertion that a man born under the Dog star (*Sirius* in *Canis maior*)—a constellation south of the zodiacal belt—does not die on the sea. This thesis had already been analysed and approved by the stoic philosopher Chrysippos, who lived in the second half of the third century B.C. It must, of course, be much older than that

The following extract from the writings of Teukros of Babylon, probably Babylon in Egypt, the later Fostat or Old Cairo, a first century A.D. “interpreter” of the writings of the Egyptian “Hermes Trismegistus” will give the reader an idea of the influence attributed to the extra zodiacal stars by ancient astrologers for the very simple reason that the technique of

If the movement of the equinoxes were oscillatory, the astrologer would, of course, be somehow justified in disregarding the precession—or regression, however you care to describe it—as a mere minor disturbance and temporary deviation from the “ideal” optimal status of the world when the real zodiacal constellations and the “zodiacal signs” of the “movable ecliptic” coincided (pl vi b). The trouble is that on the one hand Tycho Brahe—himself a staunch believer in astrology—finally demonstrated in A.D. 1598 that the *trepidatio* which disfigured until his own time all astronomical tables was based on nothing but the inexactitude of previous observations, and that, on the other hand, the modern astronomer does not base his calculations on the “ideal” state of affairs when *Aries* stood in ♈, *Taurus* in ♉ etc., but, quite on the contrary, admittedly on the state of “disturbance” in the present “iron age” of disorder, showing ♈ in *Pisces*, ♉ in *Aquarius*, etc.

So there is no exit left open to the devotee of “zodiological astrology” but to admit frankly—if he is still capable of such a minimum of intellectual honesty—that his calculations operate with wholly imaginary circles occupied by completely arbitrarily imagined and fantastically interpreted configurations of stars which have no longer been for many centuries where he supposes them to be, not to mention the fact that he attributes to the twelve sectors of a wholly imaginary circle—a mere geometrical reference system—“primary qualities” which have no meaning whatsoever in terms of modern physical science and are themselves nothing but the stale remains of an obsolete—entirely erroneous—attempt to describe the then almost wholly unknown universe.

XVI

THE INFLUENCE OF EXTRA ZODIACAL CONSTELLATIONS

ONE of the most grotesque passages in Mr Gleadow’s astrological *Biblia Pauperum* is the paragraph where he says that in drawing up a horoscopic diagram the star clerk confines his attention to the zodiacal constellations “the multitudinous (1) stars are omitted because their movement is so slow” (1’)—

as if the apparent angular velocity of the fixed stars were not absolutely equal for all of them, while the apparent distances travelled in the unit of time are, although shorter for the stars north of the ecliptic belt, yet considerably longer for those south of it—as anybody can see at the first glance by looking at the photograph of “The Rotating Dome of the Sky” in Sir James Jeans’ *Stars in their Courses*, pl. I.

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The fact that modern astrological practitioners disregard the extra-zodiacal stars has nothing to do with the slowness of their movements, but everything with the slowness of mind of the wizards who want to serve a maximum number of clients in a minimum of time, and therefore find it more expedient to look up a limited number of “positions” in their ready-made tables than to observe the real stars which are invisible most of the time from the newspaper offices or private dens where they ply their piteous trade.

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divination from the stars was evolved at a time when nobody had begun to distinguish the stars of this belt from the others (above, p 87)

"If *Aries* rises with the first two degrees of the constellation *Pisces* it announces hunters" (this surprising forecast becomes understandable for him who knows that the Semitic languages have one word for both "fisher" and "hunter, meaning literally "catcher"), "until the fifth degree appears *Athenē* (probably a name for some star near *Aries*), "she produces sages, artists, architects, mechanics and silk merchants" (Athene is the goddess of wisdom because *Pallas* means "knowledge" in Horite, i.e., Carian, she teaches all arts including weaving and embroidery) "Until the seventh degree rises *Cepheus*, he produces compassionate people and such as are themselves in a quandary" (*Cepheus* is seen as a man with raised hands') Until the tenth degree rises *Perseus*, he indicates people who are the stand by of such as are in fetters' (allusion to the myth of Perseus, liberating Andromeda chained to the rock) "*Cassiopeia* (thirteenth degree) produces quarrel some women with beautiful faces getting themselves into trouble in the end" (the myth of this queen provoking the goddess Aphrodite through her inordinate vanity) "*Andromeda* produces prisoners" (see above) "and people eaten up by repentance" (the monster Cetus threatening Andromeda) "The Whale (*Cetus*, eighteenth degree) produces jailers, embalmers, misers and forgers of other people's seals The "Man with the Lamp" (a decan star in the twentieth degree) produces lamp-lighters in sanctuaries, chandlers, also clerical and official dignitaries *Okeanos* in the twenty third degree (probably=*Eridanus*) brings royal rank *Triangulum* in the twenty eighth degree produces architects, builders, stone masons and all who work with the plumb-line, also cord makers (because builders use a wooden triangle with a plumb line suspended from the top), "tailors clothes-menders" (because triangular cuts are often torn into clothes by a nail or thorn)

The "Tom cat" (*ailouros*, first sign of the Egyptian *Dodeka horos*) makes miserable and insidious people The children of *Pegasus* (rising until the thirtieth degree of *Aries*) are horse trainers jockeys, cattle drovers and cattle thieves, pack horse- and donkey drivers

With *Capricornus* rises the "Altar" (*Ara Thuteron*, pl v, fig 7 and 8) "Its children are food and meat mongers or butchers" (because animals were slaughtered at the altar of the

gods) *Hydra*, bordering upon *Endanus*, indicates rivers changing their bed, mob rebellions and diseases caused by immoderation. The "Crown of Ariadne" (*Corona borealis*) brings banquets, drunkenness (Bacchus and Ariadne¹), amusements, revelry, orgies, distinctions (the Crown¹), war like expeditions (Bacchus invading India¹). The constellation "Vineyard" produces vine growers, wealth, cripples (because of the crooked stems of old vines), drunkards. The "headless Dove" forecasts danger incurred by a dishonest action (in other words, the danger of being beheaded). The "Mouse" causes disgust in one's own home. *Aquila* (the Eagle) makes mystics rising to heaven in ecstasy, enthusiasts, royal persons or people living next to a king (because the eagle carried young Ganymede up to Zeus). The "headless Snake" (*Serpens*) and the "disharmonious" (badly tuned) "Lyre" (*Lyra*) announce a dangerous climacteric year and an unsafe contract. The Bear (*Ursa*) means fighting and distress. The Swan (*Cygnus*) produces sweet tongued speakers, poets, diplomats, the tail of *Piscis Australis* grave danger to maritime enterprise (boats capsizing through being struck by the tail of a whale). The constellation *Eileithuia* (a mother nursing a child near *Virgo*, see plate v) causes a baby to be conceived by fornication.

Because the Greek name of the *Hyades* (Latin *sucula*—i.e., piglets) reminded all Hellenised Egyptians or Chaldeans of the verb *huein*, "to rain," this group of stars is supposed to produce foremen employed on the building of aqueducts and bath attendants. *Delphinus*, the "Dolphin," is supposed to make people into skippers, ship-owners and oversea merchants. *Hydra* makes water millers,—this cannot have been discovered by "the experience of thousands of years" since the water mill was quite a recent invention at the time when Teukros penned this line—, it produces water carriers, bath attendants and builders of ship-bridges, but also ditch diggers and gardeners, as well as bird catchers (because the Crow, *corvus*, appears to sit on *Hydra*, fig. 24), the "Boat with the man in it"—an Egyptian decan star—makes ship-owners, merchants and careless people (the image of this constellation shows a man standing upright in a very small skiff), *Endanus*, the celestial river named after the sanctuary of Endu where Euphrates and Tigris flowed into the Persian Gulf, produces water millers, but also forgers (washing off the original ink writing from documents). The Whale (*Cetus*) produces gluttons, bibbers, jailers (a man may be imprisoned in a whale like Jonah or the

Greek Hero Iason), embalmers (people putting a body into a mummy case), grave-diggers, robbers, but also serious diseases caused by catching a cold (a fish being cold and a whale being a rather threatening monster) *Orion* with his sword produces generals, war lords, soldiers, the children of the Charioteer (*Hemiochos*, *Auriga*) become prominent racing chariot drivers, carters, carriers of all sorts. The children of *Centaurus* become jockeys, horse breeders, cattle thieves and brigands, those of *Ophiuchus* (*Serpentarius*) will become physicians—because *Ophiuchus* was thought to be the god of healing Asclepius—but also athletes, killers and tamers of animals, because *Serpentarius* was thought to wrestle successfully with *Serpens*, or even to be a snake charmer. The Children of *Engonasan*—a kneeling figure—were supposed to become cobblers, stone masons and similar workers, honest, long suffering, retiring men. The children of the Cup (*Crater*) will become seers (the reader will remember Joseph's cup used for the purpose of divining Gen xlv, 5), interpreters of dreams, physicians (administering potions), poets (getting inspired over their cups), lyre-players, etc.

According to Manilius, the "Cup" may produce wine bibbers, wine-merchants, vine growers, but also—because some people saw in the "Cup" a vase filled with water of forgetfulness, drunk by the souls before they descend from heaven to earth—people who are fond of lakes, rivers and pools.

The "three Graces"—the stars we call "Belt of Orion"—bestow upon the new born "beauty, a good voice, tact and wealth."

A book quoted by Nigidius Figulus (above, p 35)—the contemporary of Julius Cæsar—under the title *Sphæra Barbarica*—i.e., the "Sky map of the Foreigners" (Babylonians and Egyptians)—gave for each of the 360 degrees of the ecliptic the astral forecasts based on the character of the stars "rising together" (*paranatellontes*) with this small section of the zodiac, each of which sends down souls destined to become "lords of the whole world" (*kosmokratores*), emperors, kings, kings ruling in pairs like those of the Spartans, demagogues, victorious generals, friends of kings, judges, priestly rulers, priests and prophets, admirals, viceroys, provincial governors, educators of princes, temple servants, hymn singers, scribes and royal clerks, rich merchants, bankers, goldsmiths, weavers, bakers, iron workers, soldiers, hunters, bird catchers, drain cleaners, tailors, painters, tamers of beasts, barbers, gladiators, jugglers,

wizards, star gazers, gamblers and an endless procession of other callings and professions

The 360 degrees of the ecliptic—considered to be the 360 gods of the days of the business year—determine not only a man's calling, but whether he is to be mute, deaf, one eyed, blind, a man afflicted with the evil eye, with a bad smell, a hunchback, a dwarf or, conversely, a beauty of such attraction that kings will fall for him (or her), a tall or small, an amiable or uncongenial person

Countless defects and diseases, spiritual and moral gifts or weaknesses are sent down, suicides are predetermined, as well as accidental death by water, fire, earthquakes, thunder storms, at the hand of the executioner, by royal decree, or through wild animals, poisonous snakes, epidemics, brigands, rebels. Children of one degree die young, those of another reach a hoary old age, those of still another are strangled, hanged on gallows, drowned or submerged in swamps. Just imagine what it means for a credulous person to be born under the fifth degree of *Aquarius* and to read in this book no better forecast than that he will hang himself by the neck in a noose!

But even such a list of 360 forecasts was not sufficient for the astrological textbook maker who had to face the objection that more than one person is born on this earth every hour of the day and that these contemporaries have by no means the same fate. However difficult you may find it to believe, there is literally no limit to human folly and industry—a man sat down to write, and did actually complete, an astrological *Mutogenesis*, a book offering forecasts not only for each of the 360 degrees of the ecliptical circle, but for every minute of it—i.e., not less than 21,600 different individual forecasts, all of them declared to have been revealed by Aesculapius—i.e., the old Egyptian physician Imhotep (Asklepios-Imouthes, above, p. 37) who got them directly from the Egyptian god of wisdom Thot = Hermes. Each of these forecasts offered a whole scheme of life predicting a man's future actions no less than his bodily constitution, aspect, length of life, dangers to which he will be exposed, etc., etc. The Sicilian senator Firmicus Maternus proposed to translate this wonderful encyclopædia of star lore into Latin, estimating that it would fill twelve books. He did not carry out his bold plan, probably because he was converted to Christianity before he could start upon this great undertaking, and was now fully occupied with inciting the emperors to persecute his former pagan co-religionaries. Perhaps posterity has not

lost such a great deal, after all, by this praiseworthy change of heart

The essential thing to know about all these texts is the wholly artificial, entirely secondary character of the connection they try to establish between the constellations called *paranatellontes* and the "zodiacal signs" (*dōdekamōria*) or degrees (*moirai*) of those twelfths of the ecliptic together with which they are supposed to rise. Nothing is more certain than that these forecasting rules were elaborated long before an ecliptical reference system of longitudes measured in degrees of the ecliptic was introduced by Greek astronomers.

Originally these forecasts were connected with the star clock and star calendar dial based on a selection of three stars for each month (above, p 83, figs 15, 16)—the so-called decans, which had no connection whatsoever with the ecliptic. These "decans" or "lords over a decade" of days were called by the Babylonians *shakanakē*, a Sumerian title explained by Babylonian popular etymology as "those of the seals," the "seal bearers" or office holders or messengers of the great gods of heaven, descending to this earth and re ascending again in rotation (above, p 82 f), and impressing the "engraving" (*charakter*) of their seals upon the common clay out of which men were fashioned, even as a Babylonian seal cylinder was rolled over a wet clay tablet to imprint the owner's signature on it. These astral "characters" of the thirty six decans were described and illustrated in an astrological picture book called *Salmē shakanake* "images of the seals" (or seal bearers). This illustrated book was translated from the original into Egyptian for King Neche p so—*te*, Necho the Wise, the founder of the twenty sixth Egyptian Dynasty, whom his Assyrian overlord, King Assurbanipal, had dragged away to Nineveh, but pardoned and sent back to Sais and Memphis with a retinue of Assyrian "advisers," probably because the "wise" Saïte ruler had found favour in the eyes of his equally "wise" and book loving liege lord. From the Egyptian version made for King Neche p so the book was translated—probably for the Ptolemean Court library in Alexandria—into Greek. Of this Greek version, entitled *Salmesachanakai* (generally misquoted as *Salmeschoiniaka*), a long fragment survives on a papyrus found in Oxyrhynchos, now in the British Museum. It contains astrological characteristics not only for the thirty six "decadarchs," but also for the rulers of each of the two pentades (five-day weeks, Babylonian *hamushtē*) constituting a

decan of *Capricornus* is descended from high born, noble minded parents, will be educated in great wealth, well taught, have many friends, be fleet of foot, hate evil, but be extravagant and changeable. He will be unfaithful to his wife. Later in life he will be favoured by his star, become rich and lord it over many people. Characteristics pale yellow complexion, mole on the left elbow, contractions of the legs, will not be long-lived. Critical years 4th, 11th, 22nd, 33rd, 46th, 52nd, 63rd, 72nd year, will die abroad."

Just as Mr Gleadow has a chapter on "Astrology and Marriage"—a subject on which "Sepharia" has published a whole book,—all the detailed *zōidiologia* and old Hephæstion's decanologies give a great deal of attention to the future wife and the chances of married life of the person in question—who is always a man, probably because the Egyptian and Græco-Egyptian women lived in *pardah* and were not permitted either to see or to write to an astrologer. This state of affairs is completely altered when the Chaldean and Egyptian star gazers invade Rome, where the patrician as well as the plebeian ladies do more or less what they like, and are greatly attracted by astrology as well as by all the other Oriental mystical theosophies.

The astrologist claims to foretell from the decan star whether a man will marry a declassée woman, a widow, a virgin, of what age she will be, whether the wife will be faithful, whether she will dishonour her husband or, on the contrary, further his career and lift him to a higher rank of society, bring him a fortune or, on the contrary, contract debts in his name. The question is discussed whether she will survive him or *vice versa*, whether the widower will marry a second, or eventually a third or fourth time. The spiritual, sexual and religious dispositions of husband and wife are equally foretold from the stars.

The theory that the behaviour of the wife is predetermined by the horoscope star of the husband does not seem to leave enough liberty to the woman's own star-patron, unless it presupposes that all the various stars act in accordance with a common purpose. This, however, was certainly not the belief of those star clerks who evolved the theory of the "aspects" (below, ch xxvi) discussing the possible antagonistic or harmonious attitudes of the various sidereal gods.

As a matter of fact, it is quite essential, for the purpose of understanding all these theories, always to keep in mind the

general theologic or demonologic outlook of the astrologer

For our star gazers the asterisms are not rotating spheres mainly composed of hydrogen and helium, with all the other elements known on earth thrown into the bargain, radiating light and heat, but anthropomorphous gods and demons—a “Host of Heaven” grouped in a hierarchy starting with an “All Highest” god (*Hupistos, Summus Exsuperantissimus*) supposed to reign as “sovereign” (*Bel = En lil*) over the highest sphere of stars—like God Almighty on our pl iv—down to the innumerable small stars ruled by each “ten day star” leader, or even by one of the 360 one day star patrons, who have under their command as many “messengers” (*angeloi*, our “angels”), good and bad, as the day has hours, the hours minutes, the minutes seconds, the seconds terces, and so forth *ad infinitum*. These star demons, a host of fiery dust specks filling the sky, play the same rôle in the mind of the ancient “demon dreader” (*deindamon*) as air borne microbes and bacteria in the anxious outlook upon his world of the modern neurasthenic affected by bacteriophobia.

Illustrated manuscripts—especially an Armenian “Book of Solomon” portraying the seventy two “plenipotentiary” demons—show what fantastic shapes were attributed to the chiefs of this host of spirits rushing in from all sides and impinging upon the new born denizen of this earth or on his naked soul descending all the way down from the starry sky to his terrestrial birthplace.

The following sample translated from the *Salmesachanakai* papyrus in the British Museum will give the reader a characteristic example of this most barbaric and fantastic literature.

- 10 “*Pharmouthi* from (the) 16th to (the) 20th
(Under *Aquarius*)—*i e*, month *Pharmouthi*, from (the)
16th
to (the) 20th. The one in power over it (*ho de
krataos autou*) his name
is (*onoma autou estin*) *Nebu*
Thus (name) indicates saying one is “the lord
of wars” and
- 15 “of the word” (or “reason” *tou logou*)
“His image (*tupos*) is an upright statue (*andriās
orthos*)
with the face of a vulture wearing a royal diadem

upon his head, and at the back the face
of a serpent, having two wings
and the feet of a lion and holding four daggers,
(both) the

- 20 faces being of gold He indicates (*deloi*) that the
leader (commander)
will somehow remember evil, there will be war, dis-
comfort, battle and he will be with the masses con-
versing like a friend And there will be under the go-
vernment of this (ruler) an apostate (= deserter, traitor,
turncoat and there will be war
- 25 and there will perish many towns of the Egyptian
(land) through that traitor For the sig(n)s of the
(p)eriod are (of) war and discomfort and (battle)
(Of) (mo)r(tal)s there will be a destruction In this
p(eriod)
there will be many making a living from I
some will live by singing and dan
- 30 cing, some will be precentors in sanctuaries, some, however,
by singing at banquets with good voices will bette(r)
their situation This one causes through his word the
victor to vanquish and the vanquished
- 35 to gain victory (in turn) and many will live by taking
(soldiers' ra-
tions and by registering (men) and calcula-
ting what men have drunk, some from the
land will make a living as caretakers This one cau-
ses (men to) limp because the one foot
- 40 becomes (paralysed) The infirmi-
(ty of the perio)d is around the intestines and the bow-
els and (man)y deaths will occur This one
(makes the) infirmities (sent) from the gods, lameness
and) and pain about the
Then the third god of the month ruled by *Aquarius* is
described as
- 60 " the Lord of the Flame His image is
an upright statue of a man with the face of a
towards the back, however, that of a piglet having a
sn(ou)t
in front of its face Having
(sw)ords in his hands, four, and a kni(fe)

- 65 His tongue and the face (of) fire
 He indicates that this period makes many find their livelihood through the mouth, many as advocates, others as wizards, many as sinners of gods and kings and many as (translators of languages and many in-
 (. . .) ed and from place to place migrating and (men) earning much without labour (nor worry) how it was earned . . .
 . . . are eaten up, many, however, also
- 75 (consume) the substance of others. (He makes) many passive homosexuals and many cohabiting with their aunts or step-mothers so as to debauch them
 Thi(s) god makes arch- . . .
 (. . . s) in this period.

The Greek term *krataios*—"he in power," viz; over the five-day week (Babylonian *hamushtu*, a term used since the old Assyrian tablets found in Cappadocia, 2600 B C) is the translation of the Babylonian "*sha kanaku*," "he of the seal," written with the signs NER ARAD, meaning in Sumerian "empowered servant," our diplomatic title "minister plenipotentiary." The underlying idea is that the Lords of the three belts, "wheels," "orbits" or "roads" (*harranē*) of the sky, the gods En-lil, Anu, Ea send down from the sky every pentade or decade (above, pp 79 ff) the star-demon of the constellation which becomes invisible in this period, in order to act as their messenger (*sukal*) superintending the living and the dead in the underworld and to bring to men all the good or bad gifts which Fate has decreed for them

The "power" to act in this way is conferred upon the "messenger" by giving him a "seal" (*kanaku*) which makes him into a lord "of the seal" (*sha-kanaku*). The seal is supposed to be engraved with the "type" (*tupos*, Babylonian *salmu*) or "*charaktēr*" ("engraving," above, p 131 ff) representing the configuration of the stars in question


This *charaktēr* and the name of the demon can be engraved on the particular stone sacred to the star in question (see below, p 249) by the magician who knows the one and the other, as may be seen from the following prescription, taken from a complete list of decan stars in the "*Sacred Book of Hermes to Asclepius*," a third- or early second-century B C. Greek writing first published by Cardinal Pitra from a Moscow manuscript:

"Fishes 3rd Decan This one has the name *Syro* He is invisible and called "the spiral snake" (fig 30a) He has a beard and on the head a royal diadem Engrave it in hyacinth stone, put the plant *Anthemia* below it, enclose . in what thou wilt and wear it"

Of the first decan in *Pisces* the same text says that "he rules over the feet and sends ulcers to them Engrave him upon beryl stone, put dove-wort below it," etc

The name *Syro* given in this Græco-Egyptian Hermetic treatise to the star demon of the "coiled" or "spiral snake"—represented in this shape amidst all the other constellations on Babylonian boundary stones (fig 30a) of the Kassite period (c 1600 B C)—presumably our circumpolar constellation *Draco*—is nothing but the Babylonian word *sru* "dragon," "serpent"

The constellation *Draco* is called "dark," or "difficult to see," in several astrological texts because it is mainly composed of stars of feeble luminosity This is why "Hermes" calls it "invisible"

In the same way, the name *Nebu*, given in the Greek *Salme sachanakæ* papyrus to the "plenipotentiary" ruling over the second pentade of the second decade of *Aquarius*, is evidently the name of the Babylonian god *Nabu*, the *Nebo* of our Bibles, meaning "the Speaker," "he who calls," "the Herald," "the Prophet," etc The Egyptian translator gives a popular etymology of it, explaining it as the plural *nebw* of the Egyptian word  *neb*, "lord"—the plural because the divinity in question is the "Lord of wars" (*neb herw*) and the lord of the word "Lord of War" or "of fights" is, indeed, the Egyptian title written in hieroglyphs beside the falcon headed figure of a decan star holding bow and arrow represented on the *naos* of *Saft el Henneh* in the Eastern part of the Nile Delta

From these few samples the reader will see for himself what a long trail of barbaric imagery and purely nominal, purely linguistic assonances and equations forms the real historic background of the "divinely revealed" chaotic and abstruse wisdom which can be shown, and has been shown by the late Prof A Warburg and his collaborators, to have survived in ever new transformations and translations—from the Greek into Persian, from the Persian into Hindostani and into Arabic, from Arabic into Hebrew, from Hebrew again into Latin—down to the long series of astrological textbooks written by more and more

ignorant self deceived deceivers in the various modern European languages

XVII

THE EMPIRICAL BASIS OF ASTROLOGY SOLAR AND LUNAR INFLUENCES ON LIFE ON EARTH

ORACLES based on the "decans" and "zodiacal signs"—*i.e.*, on the so-called "fixed stars"—rising, culminating or setting at the moment of birth or conception were used in antiquity, as they are now, in the main by the smaller fry of astrologers providing the common lot of mortals with forecasts at small cost for the customer and little trouble for themselves. The elite among the star clerks would then, as they do now, concentrate upon the much more laborious, and apparently much more "scientific" and even "mathematical" task of studying the relative positions of the said "fixed stars" to what used to be called "the seven planets" (below, pp 162 ff) at the critical moment when a certain individual life was supposed to begin (above, p 26). They would say that although the rise of a certain "zodiacal sign"—originally a particular group of "fixed stars"—creates the general conditions for an individual life, the particular details depend essentially on the position of the seven "errant" or "straying stars" (*planētai*), which are, as it were, the pointers on the dial of the celestial clock and the star calendar.

What this argument comes to, in reality, is the fact that the art of astromancy or divination by stars started upon its career a considerable time before anyone had noticed that there were five stars among those visible with the naked eye which altered their position relative to the "fixed stars" in a way similar to the behaviour of the "two great luminaries," as they are called in the Scriptures. The Babylonian star dial (figs 15 f) mentions only the conspicuous Mars, Venus and Jupiter, the latter twice under different names, but not yet Mercury and Saturn. This primitive method, evolved before the discovery of the "five planets" (below, p 157 f, 171), survives in the popular forecasting methods of the calendar makers and weather prophets, while "planetary astrology" (below, pp 161 ff) is a refinement superposed on this primitive system at a later age, but essentially

similar in principle to the sub-structure of thought upon which it has been erected

The nature of the reasoning process which led to a belief in a powerful influence of the celestial lights upon all that happens on earth is by no means difficult to understand

To the more or less correlated mass of pure "imagination" suggested by the luminous pattern of stars in the sky (above, p 54) a number of real experiences were added in the course of time which seemed to prove, beyond the possibility of doubt, that the movements of the larger and lesser lights across the vault of heaven had a dominating influence upon what was "happening" or "done" on earth

The regular alternation of night and day—caused by the apparent movement of the sun round the opaque body of the rotating earth—determines the periodic rhythm of all human and animal activities Sleeping by night, working, hunting, playing by day—or *vice versa* in tropical climates where the heat of the sun is overbearing—was, and is, a necessity for man and beast

Even the primitives are known, therefore, to observe the daily movements of the sun to "orient" and to regulate their journeys in space and time, their work, rest and meals with reference to the length and direction of their own shadows The Greeks measured its varying extension in lengths of their own steps (*stoicheia*) It seems that the Babylonians were the first to construct a sun dial which enabled them to divide the time between sunrise and sunset into six "seasonal" or "Babylonian" hours According to Herodotus, the Greeks borrowed both this sundial and the division of day and night into twelve "hours" from the Babylonians

For obvious reasons no nation is known to have used the uncertain shadow thrown by the light of the moon rising and setting at all hours of the solar day as timekeeper for the hours of the night although there is still a curious moon dial at Cambridge The Egyptians can be shown to have tabulated a suitable selected series of 'hour stars' (above, p 81 fig 14) rising above, culminating and setting below the horizon for the purpose of dividing, by means of this star clock, the night into twelve hours of seasonally varying length Their "hour-watchers" (*horoskopoi*) would sit in pairs, the one opposite the other, and sight the respective stars through the slit in their palm staves (*phoenix astrologas*) by means of a plumb line fastened to an ivory holder (fig 17a)

Euripides introduces in his tragedy '*Rhēsos*' a soldier of the heroic period mounting guard and clamouring for relief because their watch is over "the Pleiades having already gone down and the Eagle being already high up in the sky"

This shows that the Greeks, too, used their constellations at an early period as clock stars for the purpose of dividing the night into "three watches" The use of *Ursa maior* rotating backwards around the pole star and indicating the time of the night by its position, not unlike a gigantic clock pointer, was well known to the Chinese, whose astrology has been shown by Carl von Bezold to be dependent on Babylonian star lore

Since these time keeping stars were endowed by their watchers with an anthropomorphic personality (above, p 83 f), it was natural to consider them as the heralds and messengers of the gods bringing the orders for all the ritual and secular actions—prayers, offerings, ablution—which had to be performed at stated hours Since everything good or bad that happened had necessarily to emerge in the hours heralded by these stars it seemed plausible to consider these time keeping divinities as the givers or carriers of all the good and bad gifts of fate (above, p 131 f) and to try to placate and conciliate them by prayers and offerings

As to the moon, the revolutions of which are of no help as "signs for days" or hours, the cyclical changes in its apparent shape—not recognised as a mere effect of light and shade related to the changing relative position of sun, moon and earth until a comparatively late period in the history of Greek thought—were easily observed to recur approximately twelve times in the cycle of seasons caused by the varying angle at which the rays of the sun strike the earth The moon was easily seen to travel through a belt of stars conveniently subdivided into twenty eight "stations" or "mansions" (above, p 76), corresponding to the number of days in such a lunar month, probably long before the sun was known to move successively through the twelve sections of its apparent orbit and through the constellations corresponding to the twelve "lunations"

Over these twelve lunations or "months"—a word which means nothing but "moons"—all the regularly recurring labours of a peasant's life are spread out in a fixed order One of the earliest Hebrew inscriptions (c 800 B C) gives a list of the twelve months and the agricultural chores to be done in their course Many ancient and medieval calendar poems and their

illustrations (pl x) repeat this or similar lists. In the Sumerian calendar the months are named after these various activities there are seed and harvest and brick making months, etc. The enormous importance of this astral calendar for the "*Works and Days*"—the timely planning of the peasant's cyclically recurrent labours, as they were described by the Greek poet Hesiod—can hardly be realised any longer by modern men ordering their lives by looking into a printed almanack.

Ever since Pytheas of Massilia (fourth century B.C.) and the Chaldean Seleucus of Seleucia systematically observed and stated this correlation it has been known that the daily tides of the sea—so important for the fisher and skipper—are, as Shakespeare's Falstaff says "governed by our noble and chaste mistress the moon under whose countenance we steal."

The primitive "logic" underlying the practices of "sympathetic magic"—*similia similibus*, "like through like"—could not but suggest that the "waxing" and "waning moon" influences all growth and decay on earth.

As a matter of fact, the moonlight—sunlight reflected from volcanic ashes, as we know now—does further the growth of plants, which is perceptibly retarded if they are shaded against it. This is no more miraculous than that the growth of trees and shrubs is furthered by the electric or incandescent light of street lamps, as anyone can notice by observing the shapes of alley trees and bushes in the front gardens of well illuminated suburban streets.

The primitive fancy of certain nations—not of all, by any means—likened the waxing of the moon—supposed to be the mother of the stars—to the swelling of a pregnant woman's womb, the "conjunction" (*suzugia*) of the sun and the new moon to the copulation of man and woman (Greek *sunodos*, Latin *coitus*), whence the term "synodic month" for the period between two "new moons."

The observation—statistically confirmed by the Swedish scientist Svante Arrhenius—that the period of human ovulation coincides approximately with a sidereal lunar month of 27.3 days—i.e., with the time taken by the moon for one circuit of the sky, not with the time from the new to the full moon—a fact from which the name "menstruation" is derived—was used by Charles Darwin as an argument for the hypothesis that life took its "origin" somewhere on the sea shore under the influence of the high tides caused by the moon although it is much more probable that this phenomenon was the result of

an adaptation of the process of ovulation to mating periods determined by the recurrence of moon-lit nights

The further observation that ten such periods are contained in the average human gestation period would, of course, support the belief in a biological reality corresponding to those crude mythological metaphors, largely based on "approximate" coincidences which disappear as soon as we "look at larger time charts" and remember that "a miss is as good as a mile" (see below, p 198 f)

Anyhow, people living on the sea coast firmly believe in some sort of correlation between the tides and the beginning and end of human life. It has been asserted—by the psychologist Dr G R Heyer of Munich on the authority of Dr Deecke of Lubeck—that on the Friesian island of Sylt children are born—more exactly births are proceeding—only while the tide rises. Midwives being called while the tide is ebbing take their time, but they begin to hurry as soon as the flood rises. English readers will remember Dickens's *David Copperfield*, and the belief of the Yarmouth fisherfolk that old people do not depart this life except with the outgoing tide.

Whatever truth there may be in these yarns, the connection between the reproductive activities of certain lowly types of plant and animal life and the phases of the moon—already known to Aristotle and other Greek and Latin writers—is close enough to attract the attention even of the modern zoologist. The land crab (*Gecarcinus ruricola*) is known to come from the mountains in swarms three days before the greenish marine palolo-worms (*Eunice*) arrive at the stage of sexual maturity, all at the same time, "just before sunrise on the day before, or the day after, the last quarter of the moon in October" for the Pacific variety (*Eunice viridis*) or "within three days of the last quarter of the moon at the end of June, or at the end of July" for the Atlantic palolo (*Eunice fucata*) when "the sea over a vast area is suddenly 'alive' with worms like a vast area of thick vermicelli soup. The inhabitants of the shore eat them raw or cooked. Those which are stranded on the sandy beaches are gobbled up by the hosts of land crabs" (pl xiv).

This strange phenomenon of "lunar periodicity" of spawning—not confined to palolo-worms and land crabs, but observable also in the 'spatting' of the edible oyster, of the queen-scallop (*Pecten opercularis*) and of an Egyptian sea urchin, as well as of the common ray worms (*Nereidæ*), and tentatively

related to the gravitational "pull" of the moon on the tides, as well as to the light it sheds on the floods—may have been observed on the coasts of the Persian Gulf by the "Fish eaters" who taught astrology to the earliest inhabitants of Mesopotamia (above p 78) Anyhow, it would seem to be at least a remarkable coincidence that the zodiacal sign of the crab (*Cancer*)—specially characterised by the Babylonians as the "land crab" (crab "of the field" *sha eqli*—above, p 95)—should have been considered by ancient astrologers (and their modern disciples) as the "house of the moon" (below, p 201) all the more remarkable since the sign of *Cancer* marks the time of the summer solstice, the spawning time of the Atlantic marine worm Curiously enough, the Babylonians called the *Anunitu*-star—the northern one of our Fishes (above, p 107, pl xiii)—(*kakkab*) *Tultum*, "the Worm Star," possibly with reference to the phenomenon of the sea swarming with marine worms in the late autumn, the date of its heliacal rise

"Pre scientific" observers have a natural tendency to premature generalisation on the basis of limited experience H Munro Fox, who has written a monograph on "*Lunar Periodicity in Reproduction*," found the belief that shell fish are plump and in season at the full moon, and lean and out of season at the new, expressed in ancient and medieval Greek and Latin authors, and still held to-day in all fish markets around the Mediterranean At Suez sea urchins and crabs are said to be "full" at full moon and "empty" at new moon, at Alexandria the same is said of mussels and sea urchins The Tarantines believed oysters to be fattest at full moon, in Nice, Naples, Alexandria and in all Greek sea ports urchins are said to be fullest at full moon

Careful investigation has shown that the statement is quite untrue of mussels (*Mytilus* sp) and sea urchins (*Strongylocentrotus luidus*) in the Mediterranean and for mussels (*Mytilus variabilis*) and crabs (*Neptunus pelagicus*) in the Red Sea But it is actually true for the sea urchin, *Centrechinus setosus*, found at Suez, the gonads of which show a cycle of growth and development corresponding with each lunation throughout the breeding season Just before the full moon, ovaries and testes are at their greatest bulk, filled with spermatozoa and eggs, which are spawned into the sea at full moon time Then the shrunken gonads are filling gradually again with ripening sexual products to be shed at the next full moon (pl xiv) It is clear that a belief held by Greek and Latin

authors, and still surviving around the Mediterranean, although it is quite untrue there, but which is confirmed for one variety of sea urchins found at Suez, must have been handed over by the Egyptians, who had made this observation at their Red Sea ports, to the classic nations who generalised it without troubling to put it to the test of experience

It is most amusing to read even in Francis Bacon's *Sylva Sylvarum* (1627) the following wild exaggeration of this little bit of true information handed down from Egypt to Greece and Rome at the dawn of history "The opinion received is that

brains (!) in rabbits, woodcocks, calves, etc., are fullest in the full of the moon and so of oysters and cockles, which of all the rest are the easiest tried, if you have them in pits" The reader will notice how the brain—the shape, whitish colour and wrinkles of which remind the naïve spectator of the round, whitish and spotted shape of the moon—has replaced here the ovaries of the marine animals in the original observation

The only authentic case of lunar periodicity in plants is recorded of the marine *Dictyota dichotoma* at Beaufort, North Carolina, which produces one crop of sexual cells in each lunar month The same species observed at Bangor, Plymouth and Naples has a tidal reproduction rhythm—*i.e.*, two cycles for each lunation The difference is unexplained and is all the more paradoxical because Beaufort has a small tidal range (0.8 m), Naples a still smaller (0.3 m), but Bangor the vast one of 5.4 m

Sargassum—the sea weed encountered by Christopher Columbus in such masses in the "Sargasso Sea" on his first voyage to the Caribbean coast—shows equally a bi lunar reproduction cycle

The popular belief in the moon's influence on plant growth is world wide and ancient Both classical authors and modern Egyptian *fellahin* assert that melons, marrows and other cucurbitaceous fruits grow most rapidly on moonlight nights—presumably because the moon itself looks so much like a yellow pumpkin The belief was carefully tested in the Cairo botanical gardens and completely disproved, presumably because the moon struck pumpkin needs the presence of a credulous Egyptian *fellah* acting as a catalyst in order to vary its rate of growth with the strength of the moonlight, and refuses to perform the traditional acceleration if it is being observed, measured and weighed by an unbelieving English biologist Or perhaps the case is analogous to the watched pot which never boils

A definite lunar periodicity has been found in the frequency of plankton organisms drifting in the water of the Illinois River, and equally in the San Joaquin River in California. There is a maximum frequency of floating algæ at full moon followed a little later by a maximum frequency of the crustaceæ living on plankton. This correlation may explain the belief in crabs being "fatter"—*i.e.*, better nourished—at full moon.

The periodicity of the plankton frequency might be explained with reference to the observation that the oxygen content of water containing *Englena* is higher on moonlit than on dark nights, apparently because the moonlight causes photosynthesis. Surprisingly enough, the photosynthetic effect of moonlight was found to compare with that of sunlight as 2:9, while the intensity of sunlight is 600,000 times as strong as that of moonlight. The reason may be that the photosynthetic effect is so much greater in the cool water of the night than in the warm water of the day.

Munro Fox has found that the oxygen consumption of pigmented animal tissues is greater in the light than in the darkness. If moonlight should have sufficient intensity to cause this effect, that may be the reason for the reproductive periodicity of sea urchins and similar organisms.

Miss Semmens has shown that moonlight increases the velocity of germination of seeds. It seems that polarised light increases the rate of hydrolysis of starch with diastase. Now, light reflected from the moon is identical with sunlight in nature, differing only in intensity. Their spectra are identical, and each is polarised in the same proportion, the polarised light being in each case a part of that which is reflected from the sky. No polarisation of the light received directly from the face of the moon—or, for the matter of that, from any planet—can be detected with a Savart prism.

So the accelerated germination of seeds by moonlight would simply be the effect of the polarised moonlight reflected from the sky on clear nights added to the polarised sunlight equally thrown back from the sky on clear days.

"Selenotropism" of certain flowering plants turning their flowers towards the moon in the night has been observed. It is quite analogous to the heliotropism of plants turning towards the sunlight in daytime, and presumably to be explained by a similar mechanism.

Anyhow, all these perfectly natural phenomena are quite sufficient to explain the widespread beliefs held by peasants and

gardeners all over the world concerning the advisability of planting seeds and seedlings while the moon waxes

In sowing time ne'er would I dibble take
Or drop a seed till thou wast wide awake

The Moon, John Keats Endymion

They have their root in a small grain of experience and in a great deal of superstition based on "analogical magic"—i.e., the idea that the alleged "growth" of the visible part of the moon's illuminated surface (Luna herself does not "grow," of course¹) furthers, while its diminution is believed to hinder, the growth of plants

At the newly founded John Innes Horticultural Institution a very thorough investigation was concluded in 1941. It was spread over four months, April to July, sowings being made of radishes, cabbages, beans, carrots and onions both indoors and in the open four times in every lunar circle. The investigators, Messrs Mather and Newell, found there was "no consistent effect of the moon to be observed in either set of observations. Thus, sowing in good conditions of soil and weather will always give good results, while sowing with the moon will convey little or no advantage, at least with the five types of plant used in our experiments."

The thesis of Madame E. Kolisko—set forth in her book on "*The Moon and Plant Growth*," published by the Anthroposophical Society—that, according to laboratory experiments, all plant growth, without distinction, is more rapid and generally satisfactory if sown or propagated two days before full moon, the effect being reversed if the sowing or propagation is made two days before the new moon—with unexplained exceptions noticed around the Easter Moon—has been tested by Messrs J. Cecil Maby, B.Sc., A.R.C.S., F.R.A.S., and T. Bedford Franklin, M.A., F.R.S.E., joint authors of a remarkable book *The Physics of the Divining Rod* (1939), the "general conclusion" at the end of the period from February to July, 1938, "being that no sure distinction could be made between new-moon and full moon results of the given period." This finding is all the more significant since it can be clearly seen from the context and from the very open minded and unprejudiced investigators' announcement of the intention to repeat the test, eliminating certain conditions which might have led to this negative outcome, that they expected, and would have welcomed, a positive result.

The well known fact that clear nights in general, favouring

the irradiation of the heat accumulated during the day in the soil and in the atmosphere into the cold outer spaces, produce an ampler fall of dew is responsible for the widespread belief that the dew-fall is richest on moonlit nights—in other words, that the moon is, as Shakespeare says, “the watery star” or “the moist star” “upon whose influence Neptune’s empire stands”

Equally widespread is the belief that the weather changes with the phases of the moon. It is reduced *ad absurdum* by the simple fact that the changes in the weather vary—as every weather-chart shows—from place to place, according to a complex variety of circumstances, while the phases of the moon are seen to change simultaneously all over the earth.

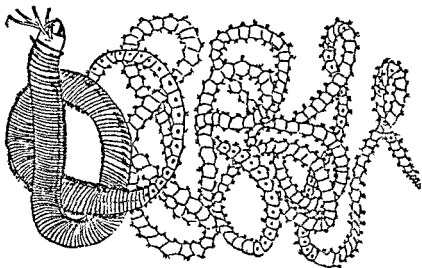
In spite of this, the crude superstition is ineradicable, because people remember every change in the weather coinciding with a change in the phases of the moon, while they forget the countless instances where the weather changes without any correlation with the lunar phases, or remains constant through several “quarters” of the “fickle moon”

The superstitious belief that the “waxing” moon furthers, while the “waning” moon hinders plant growth led to the gratuitous conclusion that human hair or nails should be cut while the moon grows, and not while it “diminishes”

Anyone who has had the misfortune to live in the neighbourhood of a mental hospital knows how much more noisy its inmates are on moonlit nights, simply because these nights are clear and not dark nights, and therefore less conducive to deep and undisturbed sleep. But it is easy to understand that this simple fact must have led the primitive magician and witch-doctor to believe that neurotic or psychopathic patients were “loony” or “lunatic”—from the Latin *luna*, “the moon”—in Greek *selēniakoi* from *selēnē*—*īe*, “moonstruck,” as we say, by analogy with “sun-struck,” which means damaged by excessive insolation. (Aristotle and Theophrastus use the term *astrob(o)lētos*, Latin *sideratus* and *astrobol(es)ia*, literally “star-struck” and “star stroke,” for our “sun-struck” and “sun stroke”

The famous physician *Theophrastus Paracelsus* (1493-1541) still taught that “lunacy grows worse at full and new moon, because the brain is the microcosmic moon” The explanation given accounts equally for Francis Bacon’s theory (above, p. 141) that “brains are fullest in the full moon” It is also the basis of the legal doctrine considered valid in this country

PLATE XIV



Palolo Worm



Land Crab

Reproduced by courtesy of Mr W P Pyecraft, F Z S
and *The Illustrated London News*

down to the passing of the Lunacy Acts of 1842, which defined a lunatic as a demented person enjoying lucid intervals during the first two phases of the moon and "afflicted with a period of fatuity in the period following after the full moon"

Similarly simple is the explanation of the fact that fishes will not so easily be caught by nets which are more clearly visible on moonlit nights, and that, on the contrary, nocturnal animals prowl about more actively on clear moon nights, so that the moon has a considerable importance for fishers and hunters

Messrs Savage and Hodgson, marine biologists, have shown in 1934 that the East Anglian autumn drift net season for herrings yields the best landings at full moon. The success of the herring fishing season depends on the date of the full moon. The best conditions prevail when the October full moon occurs during the second week of the month. Under these circumstances five weeks of good fishing can be predicted.

Similar investigations have now been carried through by Mr C F Hickford for the fisheries based on Milford Haven. If the full moon occurs during the first sixteen days of September the odds are slightly in favour of a good season. When the moon is full in the last two weeks of September, the season is almost always found to be a bad one. The reason for this has not yet been discovered.

Because primitive man was largely a hunter and fisher who had to take advantage of moonlit nights, and because the inheritance of the primitive behaviour pattern is still alive and active in (what C G Jung calls) the "archetypes" of our subconscious mind, each one of us is still curiously excited, "inspired," restless and unwilling to go to bed on moonlit nights. This is specially true of that throw back to the atavistic state of our predatory ancestors, the man with "criminal" tendencies.

On the 9th of January of the year 1941 the *Daily Mail* carried the following curious item. "His father always went wrong when the moon was full, and it affects this boy the same when it is on the wane," said a mother at Birmingham Police Court, pleading for her son. The son, Aircraftman N N, aged 23, of Kingstanding, Birmingham, an absentee from the R A F, pleaded guilty to stealing money, and was sentenced to six months' hard labour. Obviously, the judge did not feel inclined to accept moon shine as an attenuating circumstance.

XVIII

FORECASTS BASED ON THE PHASES OF THE MOON

CONSIDERING the large body of experience dealt with in the preceding chapter and its inevitable misinterpretation by primitive man in the alleged "pre logical" state of mind, we would expect *a priori* to find traces of a method of sooth saying based entirely on the observation of the moon. As a matter of fact there is a whole class of books known under the Greek name *Selenodromia*, in Latin *Lunaria*.

Hesiod's great poem on "*Works and Days*" (ninth century B.C.) ends with a list of the days of the month and the influence of these dates on the various activities of the peasant. It says, among other things, that "the sixth day of the middle" (decade)—*i.e.*, the sixteenth of the month—is a good day to be born for male babies, but not for females. These should not either marry on that day. The next day, too, is bad for new born girls, but perfect for a boy. A child born on that day will, however, be fond of mocking, lying, flattering and secret flirting.

On the twentieth, "when the day is full" a knowledgeable man will be born, and he will be of a right reasonable mind. The tenth day brings hefty boys the fourth of the middle (decade)—*i.e.*, the fourteenth—goodly girls. The fourth is a good day for marriage, and therefore, obviously, for conception. Good for births of boys as well as of girls is the ninth. This day is never wholly bad, although never quite innocuous.

No direct link with the phases of the moon is visible in these rules, the criterion seems to be a belief in each day being the birthday of a certain god. Thus Herakles was supposed to have been born on a fourth day, so was Hermes (Mercury), according to the Homeric hymn in honour of this god.

Apollo was believed to have been born on the seventh, the god of oaths, Horkos, son of Eris (Litigation), on the fifth. The sun god (Hēlios) and the moon goddess (Selenē) were believed to have been born on the first, Athēnē (Minerva) and Ares (Mars) on the third—therefore an unhappy day, since it saw the origin of war. Artemis (Diana) is thought to have been born on the sixth. Poseidōn (Neptune) and the healer god Asklēpios on the eighth, Rheia and Dionysos (Bacchus) on the

ninth, Dēmētēr (Ceres) on the twelfth. The first, fourteenth or fifteenth, twentieth or twenty-first were dedicated to the two great luminaries, obviously when it became generally known that the phases of the moon were caused by its position relative to the sun.

Greek personal names, such as "Artemidōros" (gift of Artemis), "Apollodōros," "Dionysodotos," etc., seem to express the idea that the child in question was a birthday present to the or from the god whose birthday coincided with that of the baby.

It is probable that the Greeks got this calendar lore from the Egyptians. Herodotus (II, 82) tells us that the inhabitants of the Nile valley knew to which god each month and each day is sacred, and that they stated what fate a man would have who is born on that day, how he is going to die, and what sort of a man he is going to be. He also says that Greek poets had used forecasts of this kind, referring probably to Hesiod and to the mythical poet Melampus, the "Black foot," the representative of the primitive old "settlers who did not wash their feet and slept on the ground" (Homer's *Hellor aniptopódes chamaeunai*) and prophesied from the rustling of the leaves of the sacred oak of Dodona, as well as to *Selenodromia* and similar texts circulated under the name of Orpheus.

As to what Herodotus says about the Egyptians, his report is fully confirmed by the Papyrus Sallier IV, of the time of the Ramessid kings, which characterises the fate of children born on particular days in the following manner:

"The fourth of Tybi is good good good" (meaning all the three thirds of the day are equally good). "What thou seest this day, augurs well for thee. He who is born on this day, dies older than the other members of his family. He will have a long life and succeed his father. The fourth of Paophi bad, good, good. Do not leave your house on this day what ever you do. He who is born on this day dies by infection (plague) on the same day. Fifth of Paophi Bad, bad, bad. Do not go out on this day. Do not approach women. This is the day for sacrifice. Montu (the war god) rests on this day. He who is born on this day, dies of love sickness. Sixth of Paophi Good, good, good. Happy day in heaven, the gods rest before the god, the circle of gods performs sacred rites before the god. The child born on this day dies through drunkenness." A child born on the seventh of *Paophi* will die "on the stone"—i.e., in the rocks of the mountains along side the Nile Valley. Birth on another day means to die by

a crocodile, the child of still another will be stung by an adder, that of still another "die in great honours in the midst of his family" He who is born on the 9th or 29th of Paophi may "live quite unconcerned, his luck will not leave him" (the Germans would say "he is a Sunday Child," *ein Sonntagskind*) One need not worry about children born on the 7th or 27th of this month

Although the way a man will die is fixed, the date is not Should such a man be condemned to death, he may be able to survive in spite of the executioner's efforts If he is threatened by a serpent or crocodile, the first animal of this kind he meets might kill him Therefore he should be on his guard, and the parents should keep a good watch over the child He himself can take precautions—*e g.*, stay away from rivers and canals where he may meet crocodiles Also he can wear amulets and perform suitable rites

Obviously, if this were not so, and if fate were inevitable, there would be no point in consulting the soothsayer and paying him a fee for his advice, his amulets and ritual prescriptions This is the obvious reason why priestcraft multiplies the evil, blackmailing predictions "children born on the 20th of *Thot* are unable to survive," a bull may kill the one born on *Paophi*, the 5th One born on the fourth of *Athyf* will be beaten to death, the child of the twentieth may die in its first year, that of the twenty third will be drowned Other birthdays make the children go blind or deaf or die of an inflammation of the ear

This classification of the calendar days into "good" and "bad" ones (*dies fasti* or *nefasti*) was introduced into the official Roman calendar, where these indications were known as *dies Aegyptiaci*, "Egyptian (good and bad) days" But the Egyptians themselves seem to have got them from the Babylonians For we have a cuneiform "*Hemerology*" for the intercalatory month *Elul*, the so-called "second *Elul*" (*Ululu shannu*), which classifies the days of the month into "good" ones (lit "pleasant" ones), "bad days" (*umu lemnu*, Sumerian *u hulgalu*) and "balanced days" (*umu mitquaru*, lit "weighed days," when good and bad balance) Each of the days of the month is dedicated to a particular god or goddess The idiom "balanced day" shows that the terms are borrowed from a lunar calendar, since we know that the Babylonians were wont to say of the full moon rising just opposite the setting sun or setting just opposite the rising sun, that the two are "in

the fugitive¹) "Those born on this day will be very happy, lucky in all their adventures, and they will not be troubled by burdens. If somebody falls ill on this day, he will soon recover. If he has a dream, he shall keep it secret and not tell it to anybody, even the sun god" (Artemis is the moon goddess)

The seventh day, the birthday of Apollo, is generally considered a lucky day. But this moon calendar says the children of this day will be invalids, unhappy, short-lived and exposed to many dangers, because on that day Cain slew Abel. This is inferred from the sacrifice each of the brothers offered to Hermēs, Apollo, Artemis, Poseidōn, Pluto, Dionysos, Hephaistos, Dēmēter, Lētō, Arēs, Zeus, Hora, Phosphoros (the Morning star), God which caused the fatal quarrel. Each day has its patron: the Charites (three Graces), Dikaiosunē (Justice), Elpis (Hope), Hupnos (Sleep), Thanatos (Death), Alētheia (Truth), Hemera (Day), Tuchē (Fortune)

Children born on each day are characterised as "fit to live" or "not fit," "lucky," "audacious," "reasonable," "flourishing," etc. Children born on the twelfth, the birthday of Dikaiosunē (Justice), are said to be "difficult to bring up, wicked, melancholy and not very laborious." Evidently the soothsayer had a grudge against judges and lawyers, probably because he wrote at a time when "mathematicians" and star gazers were legally persecuted, punished and exiled. A child born on the thirteenth, the birthday of Dionysos, the day on which Noah planted his vine, will be a drunkard, prone to fury, and aggressive. The same is said of the children born on the sixteenth, the birthday of the Dioscuri (because the *Gemini* are sometimes interpreted as Apollo and Dionysos). Those born on the twentieth—the birthday of Hemera—will be drunkards, prone to

be drunkards, those of the eighteenth vindictive, those of the twenty first will be odious to all men Children born on the twenty fourth die through water or the sword, those born on the twenty fifth are "wicked and quarrelsome," those of the twenty sixth die "on the water" To be born on the twenty ninth means to be pursued by bad luck, on the first to be long lived, on the second to be rich, on the eighth, ninth, tenth, eleventh, twelfth to be "beautiful, fortunate and honoured" If you are born on the twenty third—Benjamin's birthday—you will be a priest, if on the twenty second—Joseph's birthday—you will "flourish and govern" as he did

The real "lunaries" emphasise the shapes the moon takes in the course of the month, distinguishing some seven, ten, twelve and up to thirty different "phases" Two such texts attributed to "Melampous," the "Blackfoot" (above, p 147) are in the Paris National Library The Byzantine editor of the one says that it is derived from two books, one by Melampous, the other by "The Sage," that is, king Nechepso (above, p 128), Necho the Wise of Egypt, with whom Melampous was believed to have been in correspondence

According to Melampous, the first day of the moon is wholly good, according to the other sage only the forenoon is good The second day is good, according to Melampous, from the sixth hour till evening, according to "the sage" this is true only from noon onwards Both authorities consider the third day as "wholly bad" On some days they advise you to utilise the evening twilight, on some the midday, on some the morning In the end we are assured "If you act accordingly you will never suffer a failure," words to which we can only reply devoutly "Amen"!

Another moon book is said to have been dedicated by the priest Melampous, who was conversant with the sacred script of the Egyptians—*i.e.*, the hieroglyphs—to king Nechepso Another is said to have been written in "holy letters"—*i.e.*, hieratic script, in Egyptian at the time of King Psammetichos (the son of King Nechepso), and to have been found in the temple of Heliopolis That may quite well be true, since a papyrus with the 64th chapter of the Egyptian "*Book of the Dead*" was found in the temple of Hermopolis under the feet of the statue of the god Thot, and the famous "medical" papyrus of Berlin was found under the feet of the god Anubis in Sokhem

In this type of *Selenodromion* the first day of the month

is called "the moon's birthday". On the second the moon is called *phōsphoros*—i.e., *lucifer*, "light bearer". On other days she is described as "rising," "growing," "heightened," "raising herself," "halved," "curved on both sides," "vaulted," "nearly circular," "full," etc.

The first day, says Melampous, is good for riding in a chariot, wandering, buying slaves, making your will, putting a boy to school, receiving wages and laying foundation stones. A fugitive eloping on this day is soon found again. He who falls ill on it will soon die, offspring born on the first is fit to live. Lost goods will be found. A boy born will be wealthy, but changeable, a hunter and an important personality. "He will circumnavigate the inhabited earth and return to his home,"—a forecast which seems actually to go back to the time of King Necho, when Egyptian ships manned by Phoenicians first sailed all round Africa, and when the proud Egyptians could hope that this extraordinary achievement would soon become a fairly frequent performance. "He will be known to god and men, extremely popular and an important person all through his life. But he will die young and on his birthday."

For all other days similar forecasts and directions are given whether or not you should start a friendship, wed a wife, buy a slave, enter a new office, whether you will recover an eloped slave, whether an illness will get better or worse or end fatally, whether you should start building a house, settle a dowry on a daughter, whether a new marriage will be a success, whether the wife will survive the husband, whether he will divorce her, etc. Sometimes the advice given is most objectionable, at least in the eyes of the modern reader. "Offspring born on the sixth should not be brought up, it had better not be born." The words may refer to domestic animals, but the very vagueness of the expression suggests that the soothsayer advises parents to expose children born on that day.

Some of the lines sound downright funny—e.g., "If a boy is born on the eighth, he will have a mole near the eye, he will be taught many sciences and become a scholar. If a daughter is born on that day she will have damaged teeth, get under foreign domination and help her own man to greatness." One wonders whether the writer thought of real individuals born on that day and showing these characteristics, and generalised this singular experience in this reckless way, or whether he was just blundering along without rhyme or reason.

For some days Melampous says whether conception will

result from a sexual union or not and how the child will develop. Later moon books give conception forecasts for every day of the month (They should actually refer to the days in a female's menstrual cycle.) Such forecasts have been developed by medieval Christian writers. St. Hildegard of Bingen on the Rhine (twelfth century) gives a complete set of them for all the days of the month in her book "*Causæ et Curæ*". In the introduction she says "Men conceived when the moon absorbs streams of water during a cloudburst" (she believes that the moon sails through the clouds) "the moon likes to draw to herself through water. They die by drowning" (The classic source she uses must have combined the stories of Selene's love for Endymion with the rape of Hylas by the nymphs of the water) "Those who are conceived while the moon is very hot because of the summer heat⁽¹⁾, she likes to draw to herself by death through fire. He who is conceived in the canicular days will be lacerated by wild animals" (the myth of Linos, torn to pieces by dogs in the canicular days).

"A child conceived on the first day, when the moon gets her light back from the sun, will be—if a male—arrogant and cruel, love nobody but one who fears and honours him, he will readily betray men, despise their pride and all their wealth. He will be of good health, not subject to grievous diseases. But he will not grow very old. If a daughter she will be avaricious of being always courted, she will be more beloved by strangers than by her family. She will herself be godless, love ever newly arriving men, be wicked to her relatives and despise them. She will have a healthy body, but if she falls ill, it will be a dangerous, almost deadly disease and she will not live long."

The whole list is not very auspicious. The children in question will become thieves, robbers, murderers, good for nothings, tramps, vagrants, cowards, loose fellows. The outlook for girls is equally bad. It is easy to see that the ancient soothsayer was pandering to the prevalent desire of the Roman ladies to avoid conception on as many days as possible, and that the saintly abbess of Bingen thought that it was far better for potential mothers to betake themselves to a nunnery than to have such an accursed offspring of sinners and generally unhappy creatures.

There are, finally, lunaries, deriving their prophecies from the position of the moon relative to the zodiacal signs—in other words, lunaries combined with "zoidiologies". But they are by no means logical combinations of lunar with zodiacal

portents who can, *e.g.*, understand why a man should perjure himself or become unhappy because he is born when the moon is in Taurus, unless he knows that there was a Cretan queen Pasiphæe ("she who shines for all")—thought to be a moon goddess by some ancient mythologists—who conceived an unhappy adulterous love for a bull?

If those born on the first day of the moon's entrance into *Virgo* are said to be "easily teachable" and rich, the reason is that the child held in the arms of *Virgo* was sometimes explained as the infant Plutus, son of Demeter, and sometimes represented as a child holding a pen and writing on a scroll (above, p. 100). If girls born under the same circumstances are expected to be "often weak" this is simply because the celestial "Virgin" herself was supposed to have conceived a child without having a husband (above, pp. 99, 107). If those born on the second day of the moon's entrance into *Virgo* are said to be fond of drink, effeminate, light hearted, insulting, erotic, the simple reason is that the child in the arms of the "Virgin" was believed by some to be the infant Dionysos, the son of Semele. A girl born under these circumstances will be a nymphomaniac, high spirited, over sexed. The prophecy is derived from the myth of Erigone, made drunk and seduced by Bacchus.

If it were not a waste of space and time, we could go on uncovering the purely mythological basis of all these lunar zoidiologies. But it would, anyhow, be a tedious process, adding nothing to what the readers know by now.

The only thing worth mentioning briefly is the fact that there are many Arabic, Indian and Chinese texts of this type deriving forecasts from the position of the moon, at the time of the birth in question or the respective conception, not, however, in the zodiacal signs, but in one of the twenty eight "stations of the moon," the *menazil al qamar* (of the Arabs, the *nakshatras* of the Hindus, the *sou* of the Chinese).

XIX

ASTRO METEOROLOGY

THE HUNDRED YEARS CALENDAR AND THE THEORY OF THE GREAT YEAR

If people believe, and indeed know, their calendar—*i.e.*, the change of their climatic seasons—to be determined by the position of the sun relative to certain stars, just appearing or

disappearing before sunrise or after sunset, and if they know that their solar year is roughly divided into twelve months by the phases of the moon taking place in the neighbourhood of certain groups of fixed stars, it is natural that they should be driven to the conclusion that the periodic changes of the weather from hot to cold, dry to wet, stormy to still, the sprouting, fruiting and drying of all vegetation which are of such fundamental importance to all human life, are regulated by the temperature of the earth, due to the apparent serpentine movements of sun and moon around the earth and past the milestones of their celestial journeys represented by the various constellations appearing and disappearing in their wake or heralding their advance (pl xvi)

The first appearance in the dawn just before sunrise of a brilliant star like *Sirius* would be found to coincide in Egypt with the beginning of the rise of the Nile, in Greece with the hottest days of the summer. The appearance of the brilliant star *Spica* would be hailed in Mesopotamia as "heralding the sprouting of the corn" (*nibu sha shēn*). The appearance of a certain star in *Virgo* called for that reason *Vindemiatrix* by the Latins, *Protrugetēr* by the Greeks, would announce the beginning of the grape-harvest.

The rising of a certain star would be thought to coincide with the appearance of the first swallow, joyously heralding the arrival of spring, another would be seen first on the day when the peregrine falcon comes again after his seasonal absence. So the one star would be called the Swallow (*Chelidōn*) by the Greeks, the other the Falcon (*Miltus*) by the Latins.

The peasant's calendar versified by the Greek ninth century poet Hesiod, whose father had come to Bœotia from Kumē in Asia Minor, would connect the beginning of the grape harvest with the heliacal rise of *Arcturus*. The late rising of this star heralds, according to the same poet, the end of winter and the beginning of spring, when chipping and the seasonal work of the farmer start again. Since at these times the equinoctial storms are known to rage, *Arcturus* was believed to be a "storm-star," and to be responsible for the numerous shipwrecks at this season. For the Babylonians their constellation "Swallow," or rather "Swallow-fish" (above, p 107, pl viii b), was supposed to be a "storm star" (*kakkab imbaru*), Greeks and Romans call the lucid star *Capella*, in *Auriga*, *signum pluviale*, "a rainy sign." The *Hyades* in the sign *Taurus*—meaning the "little pigs" (*suculae* in Latin)—were interpreted as "the rain-

stars" from the Greek *hucn*—"to rain") ever since Hellanicus, presumably because of their heliacal setting in late October. All the phases of *Orion*—heralding "the change of seasons"—were supposed to be threatening signs for the sailor.

The easy and natural error mistaking the temporal for a "causal" relation—the *post hoc* for a *propter hoc*—is responsible for the belief that the stars in question are not merely "signs for the seasons"—landmarks in the year's time chart—but the "operating" causes of the seasonal changes.

For primitive man there is no strict boundary line between meteorological and astronomical phenomena. Everything "above" is placed on the same plane: clouds, thunder, lightning, rain, snow, hail, heat and cold meteors, the moon, the planets, the sun, the fixed stars, the Milky Way and the receding astral nebulae—now known to be millions of light years distant from the earth—are to him in one and the same "sky" or heaven. Each of these is thought to touch and thereby to influence, the other.

Because the North wind seemed to blow from the pole star towards the observer, the goddess *Helikē*, the "winding one," transformed into *Ursa major*—originally the divinity residing in the coiled serpent *Drāco* supposed to curl round the pole—was described as a woman with hair dripping with water, a body of ice and snow, whipping hail-stones and cold winds against the earth, while the dog of *Sirius* (*Canis major*) or the "Lion" of the zodiac, were believed to breathe flames, *Orion* is thought to wade through the ocean, i.e., the stars of *Eridanus* (above, p. 125), raising flood waves, overthrowing and smashing ships, etc., etc.

Even Aristotle, who first separated the astronomical phenomena, the world of the stars, from the meteorological phenomena in the sublunar world, still placed the Milky Way, the comets and shooting stars in the category of the atmospherics.

The apocryphal *Book of Henoch* again says that the eighth sky containing the zodiacal signs (and the other fixed stars) above and beyond the seven spheres of the planets causes the change of the seasons: drought and dampness, heat and cold by its rotation.

All these most primitive ideas about the influence of the constellations upon the seasons and the weather survive in the popular calendars, which persistently attribute certain meteorological influences to the various stars, long after the more

intelligent observer must have noticed that the dates of the star calendar are permanent marks in the time chart (subject only to a slow secular shift of the "tropical points" of the sun's apparent orbit with reference to the zodiacal constellations, fig 19) while the weather differs essentially from year to year. This obvious fact has never prevented German and Austrian Roman Catholic peasants from attributing the latest spring night frosts of one of the so-called 'Buchan's spells' to the malevolent influence of "Servatius, Pancratius, Bonifacius," the three "ice men," and, worst of all, "wicked Sophia"—the calendar saints of the last days in the first half of May.

So the next step in the evolution of scientific astro-meteorology would naturally be the search for an astral element varying from year to year, and therefore liable to be held responsible for the inconstancy of the weather in successive years. Such an element was, obviously, the moon and its phases, since twelve lunations—i.e., about 354 days—did not coincide with one solar year of about 365½ days.

This is the reason for the development of the so-called *Selenodromia* or *Lunaries*—existent in Greek, Latin and all the Romance languages, in English, Dutch, German, etc.—foretelling the weather (and, by a further "analogic" extension, other events as well) from the position of the moon with reference to the various constellations through which it seems to wind its way—the so-called "stations of the moon," of which the Babylonians distinguished seventeen (above, p 76), presupposing a change of position roughly every other day in the course of a full thirty one day month of the solar or sidereal year, while the Arabic and Indian astronomers, following the example of their Græco-Egyptian teachers, distinguished twenty eight, one for each day of the lunar month (above, p 76).

This system became obsolete when Meton of Athens (or perhaps his Babylonian forerunners) discovered the "golden cycle" of nineteen years, at the end of which the beginning of the solar and of the lunar year again coincide, thereby bringing the dates of the lunar phases and their correlation with certain constellations back to their original position.

A moderately careful recording of the weather through a few such "Metonian cycles" would necessarily show that the changes of the weather by no means repeated themselves in nineteen year periods. By that time the Greeks had been acquainted through Plato's "Chaldean guest" (p 121) and Plato's posthumous dialogue *Epinomis* with the existence of the five planets

discovered by the Mesopotamian star gazers, and it was natural for them to conclude that the weather was influenced not only by the positional relation of the moon to its "stations" and of the sun to the twelve zodiacal signs, but also by the position of the minor planets relative to the stars near the ecliptic. The complication thus introduced into the star calendar was considerable enough to make it impossible to ascertain in the periods of time which ancient and more recent observers could hope to experience whether or not the changes of the weather could be correlated with some scheme classifying the possible variations and permutations in the relative position of these seven planetary elements with the twelve zodiacal constellations through which the sun could pass and with the much more numerous—say, twenty eight—stations which the moon and the planets could seem to "touch" or "approach" in their peregrinations, not to mention the supposed influence of the apparent "progressive" or "retrogressive" movements of the minor planets (below, p 203, fig 33, p 231, fig 44)

Those of our readers who know how many people still buy and believe in the so-called "*Hundred Years Calendar*," based on the absolutely arbitrary and senseless supposition that the changes of the weather follow a hundred years' cycle—as if it were in the least plausible that the fact of our having arbitrarily chosen the number of our fingers as the basis of our method of counting by tens, hundreds, thousands, etc., could influence atmospheric conditions—will not criticise too severely Plato's friend and contemporary Eudoxus for having readily accepted at their face value the astro-meteorological predictions of the Chaldeans while rejecting their claims to foretell on the same basis the fate of the individual. While modern unbroken exact records of meteoric conditions extending by now well over two centuries are quite sufficient to refute once for all the absurd claims of the "*Hundred Years' Calendar*," the astro-meteorology claiming to be based on a cycle of "great years," at the end of which all the seven planets would return to their initial position (the so-called *thema mundi*, below, p 189 and p 192) could not have been tested by experiment in the course of the few thousands of years of written human history, even if meteorological observatories had kept unbroken records from Sargon of Akkad to the time of Napoleon I, and even if the length of the "great planetary year" were taken as six thousand years on the basis of the crude and naive sabbatarian calculation devised by the famous Syrian gnostic

astrologer and poet Bardaisan in his book "*On the Conjunctions of the Stars of Heaven*," where he says

"Two revolutions of Saturn make 60 years, equal to five revolutions of Jupiter, 40 revolutions of Mars make 60 years, equal to 60 revolutions of the sun 72 revolutions of Venus make 60 years, equal to 120 revolutions of Mercury and to 720 revolutions of the moon"

"As to a conjunction of all of them, the time necessary for such a (general) conjunction to occur once, would be equal to 100 such (special) conjunctions—i.e., 6,000 years, equal to 200 revolutions of Saturn, 500 revolutions of Jupiter, 4,000 revolutions of Mars, 6,000 revolutions of the Sun, 7,200 revolutions of Venus, 12,000 revolutions of Mercury and 72,000 revolutions of the Moon"

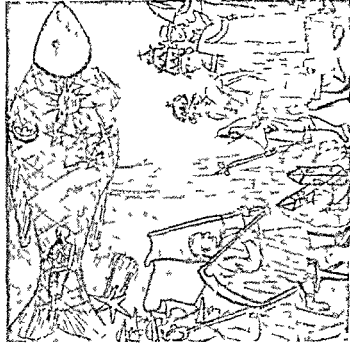
It is hardly necessary to explain to our readers that the excessive shortness of this "greatest year"—bringing it down to the order of magnitude of the length of historical experience—is due to the fact that Bardaisan uses excessively approximate "round" figures for the length of the various planetary revolutions, and does not take into consideration the ulterior condition stated in so many words by the astrological theoreticians of this "world year"—to wit, that all the seven planets should come together at a point in the zodiacal zone not only of the same longitude, but also of the same latitude. This is the reason why the Babylonian estimates, or rather alleged calculations, of the "great year" show figures of a much higher order of magnitude, such as 36,000, 72,000, 480,000, 720,000 or even 1,440,000 years.

A Greek astronomer of Lindos, on the island of Rhodes, was so proud of his calculations equating the length of the great year to 290,000 years that he set up a still extant stone inscription to put it on record. But the truth—well known to the modern astronomer and mathematician—is, of course, that the length of time which it would take the sun and the moon, the planets and the fixed stars to return to an alleged "initial position" from which they could start again on the same course, is "infinite." In other words, there is no finite number of years constituting such a period as a Great Year, and the whole idea of an "eternal recurrence" of the same world process—still asserted by Friedrich Nietzsche—is in reality quite meaningless.

Oriental and Occidental astrologers held in common a curious "cosmic calendar" theory

An overbold generalisation had led the Sumerians and the Semitic invaders of Babylonia to believe that all events happening in the world were determined, like the seasonal changes of vegetative and animal life, by the observable revolutions of the heavenly sphere marked by the cosmic or heliacal risings and settings of certain easily recognisable calendar stars (above, pp 83 ff) Just as the spiral movement of the sun around the sphere divided into measurable sections by the various constellations of the "ecliptic" brought about the four seasons of the tropical year, apparently through the sun's ascending to the summer solstice from the vernal equinox and descending to the winter solstice from the autumnal equinox, the movements of all the other planets through the zodiac were supposed to constitute a "great year" of four "cosmic seasons" Having discovered a nineteen years cycle which brings the lunar phases back to the same days of the solar year, and a *saros* period of 223 months, at the ends of which the series of lunar and solar eclipses might be expected to repeat itself, astrologers tried to construct a "great year" or "world year" period at the end of which a conjunction of all the seven planets in the same section of the ecliptic might be expected Basing their conclusion on the principle of sacred analogy inherited from the primitive magician, the cuneiform texts translated into Greek by the Babylonian priest of Bēl Berossos, Plato, Aristotle and the Stoic philosophers influenced by their doctrine—Seneca among them—expected a catastrophic cosmic heat wave (*ekpyrosis*) or fire flood (the *mabbul shel'esh* of Rabbinic tradition) as soon as all the planets should congregate in the sign of *Leo* or *Cancer*, an equally catastrophic water-flood (cataclysm) when they should all together reach *Pisces*, *Aquarius* or *Capricornus* (pl xv) a world catastrophe or equinoctial storms whenever they all stood in *Taurus* or *Scorpio*, *Aries* or *Libra*

The difference of opinion as to the situation of the cosmic "tropical" points is due to the fact that one school of thought projected the equinoxes, i.e., the intersections of ecliptic and equator (fig 5) in *Aries* and *Libra* as they existed at their own time to the alleged "creation" of the world and the first "letting loose" (*aphesis*) of the planetary chariots or spheres in the cosmic circus or hippodrome, without taking the so-called precession of the equinoxes (fig 19) into consideration—presumably because they were not acquainted with this phenomenon, while their colleagues who read about it in Hipparchus knew that the equinoxes would have been found in *Taurus* and *Scorpio* instead



The Flood drowning the World in the Last Days caused through a Conjunction of all the Planets in one of the Fishes
Title Page to Leonhard Reymanus *Practica* for 1524 (after
A Warburg, *Heidnisch antike Weissagung* p 30, fig 13



Effects of the Planetary Conjunction of 1521 A.D. Title
Page to Johann Carion *Prognosticatio und Erklärung der
grossen Wessung* 1521, after Warburg, ibid pl 1

of *Libra* and *Aries* about one thousand five hundred years before their time—taking Ptolemy's estimate of one degree per century as the true figure. Three thousand years before their time the equinoxes would have been in *Gemini* and *Sagittarius*, the winter solstice in *Pisces*, etc.

Strange as it may sound to the modern reader, the astrological calendar-makers of the Renaissance succeeded in creating a considerable scare by prophesying a new deluge for the year 1524, when they expected a meeting of all the "seven planets" in *Pisces* (pl. xv). Even Luther, who ridiculed Melanchthon's belief in astrology, saw a portent and divine warning in this perfectly harmless phenomenon.

XX

THE ORIGINS OF PLANETARY ASTROLOGY —FACTS AND FANCIES—

THE insertion of five additional pointers into the slowly revolving dial of decans, hour-stars and zodiacal signs of the old luni-solar star-clock and star-calendar having made it impossible to disprove by historical experience the sweeping assumption of a direct dependence of all meteorological phenomena on the movement of the celestial lights, the way was opened for a further, equally plausible conclusion: since not only man's activities as a hunter, fisher, ploughman, sower, planter and reaper, but also his warlike expeditions into neighbouring countries and his neighbours' invasions into his own land were strictly conditioned, under primitive circumstances, by the allegedly star-ruled vicissitudes of the seasons and the weather, it was natural to conclude that not only the ordinary, regularly recurring economic activities of the year, but also the political disturbances and their fortunate or unfortunate consequences were governed by the stars.

Again, the ordinary lunisolar calendar would never have led anyone to this purely speculative hypothesis. For even the memory of illiterate people, unaided by written records, would show them that wars did not repeat themselves regularly in the short cycle of 223 months, called *saros* by the Babylonians who used it for the purpose of forecasting the recurrent eclipses of sun and moon, nor in the nineteen-year cycle which brought the moon's phases back to their original dates in the solar year.

So they could hardly fail to think that important political events, such as wars—and, if wars, then equally the changes of government, deaths of rulers, successions of legitimate heirs or usurpers so often caused by wars—must be somehow connected with the relative positions of those stars which the Babylonians knew as well as the Egyptians, from the third millennium onwards, as the “straying,” “errant goats” (below, p 168) in contradistinction to the orderly herds of celestial sheep of the “faithful shepherd of heaven” who kept unfailingly to their place in the rank and file

By a process of playful, or as we should say poetical or mythological imagination, each one of these ‘lesser lights,’ apparently endowed with a greater freedom of movement, was considered as a sort of “captain of the Host of Heaven” (*Josh. v, 14*) Having thus been endowed with a more prominent “divine” or “demonic” personality, it would be natural to connect, or even to identify them with particular divinities of the Sumero-Babylonian pantheon, as it had developed long before these five stars had been singled out from the rest

This correlation or identification was guided by perfectly arbitrary or accidental associations of ideas, as anybody can see who compares the Sumero-Babylonian with the Egyptian planetary mythology The Egyptians call the planet Mars, because of its reddish glowing light—equally observed by the star gazers of Mesopotamia—“the red star” or “the red *Horus*” But they did not conclude from this particular colour that this star had anything to do with “blood and fire,” and was therefore to be dreaded as an evil power, as it was in Babylonia and Assyria For the Egyptians all the planets—including the morning- and evening star, which they called the “Phoenix-star (*bennu*) of *Osiris*”—were male gods (pl vii), they were all “*Horuses*,” falcon headed children of the sun-god, and thus beneficent powers When, at a very late period, and evidently under Babylonian influence, the Egyptians singled out one planet as evil and maleficent, picturing him as an incarnation of the crocodile-god *Sobek*, they chose—possibly by some misunderstanding of a cuneiform source—not Mars, but Mercury for this sinister rôle in the celestial cast

The reason for this is probably quite simple The Egyptians, who distinguished—e.g., in the famous hymn of *Amenophis IV* to the disk of the Sun—“red, yellow, black and white men,” pictured themselves in their paintings as reddish brown men,

and would obviously be free enough from inept colour prejudices to see nothing particularly hostile or threatening in a reddish star. Rather would a star so difficult to see as Mercury be thought to hide itself, and therefore to be an insidious creature like the crocodile lurking in the reeds.

On the contrary, the Sumerians and Babylonians did associate the red glow of Mars with blood and fire—not knowing, of course, that “the surface of Mars is mainly below the freezing point. A spot on its equator, at noon, with the sun beating right down from immediately overhead is probably about as warm as London on a November afternoon” (Jeans). Because of this wholly baseless association of ideas, they considered this “red glowing” planet as an aspect of their god Nergal, a divinity of the burning summer sun, of fire and blood, fever and pestilence. It is this mythological correlation which the Greeks rendered by calling it the star of the old “Aryan” war god Arēs, while the Romans attributed it to their Latin divinity of death Mars (old *Mavors*—i.e., *Maurs*, according to Theodor Mommsen a mere dialectal variant of *mors*).

For equally fanciful reasons, the shining planet mostly seen in the late evenings after sunset or in the early morning before sunrise, and thus announcing the arrival or departure of the dark time of the day best suited for love making, was believed to be the star of the goddess of sex life *Ishtar*—the *Astarte* of the Phœnicians—mis-spelt *Ashthoreth* in our Scriptures—the Cyprian *Aphroditē* of the Greeks, the garden goddess *Venus* of the Latins. (Incidentally, the Greek word *aster*, whence English “star,” is probably nothing but the name of this goddess of the most brilliant of all stars.)

That this is by no means an inevitable or logical interpretation is proved by the fact that the Egyptians know no female planet at all, and that the Greeks, the Latins, the old Hebrews and Arabs actually knew a male morning star, called *Phosphōros* “*Lightbringer*,” in the Greek, *Lucifer* in the Latin Bible.

These few simple facts invalidate at one blow and for ever the preposterous claim of all the ancient and modern stargazers that the fundamental dogmas of planetary astrology are based either on a divine revelation or on the experience of many thousands of years.

All horoscopes ever cast, from the two earliest ones we have on two cuneiform tablets of the Seleucid period (below, p. 165) to those of Hitler and Mussolini mentioned on p. 26, are based on a system in which the female element of erotic influence in

all its aspects is represented by the planet *Venus*, the element of warfare, hostility, etc., by *Mars*

So when we find the ancient Egyptian star gazers, competing with their "Chaldean" rivals for the new Greek and Roman clientèle, boasting that their astronomic records go back for 630,000 years, while the "Chaldeans" topped this figure by claiming that the Babylonian observations started 720,000 years before Alexander the Great, we need not waste any time on a solemn attempt to question these absurdly generous figures. Nor is it necessary to point out that no trace of astrology in the modern sense of forecasting an individual's character or fate from the position of the planets at his or her birth has ever been found in any ancient Egyptian text anterior to the Greek domination over Egypt.

We can readily admit that the *argumentum ex silentio* might always be invalidated by new finds in the future. But what is certain is that the Egyptian god of wisdom, Hermes Trismegistus never revealed to the Egyptians of old either the existence of a female planet of love or of a male one heralding war, death, fever and pestilence. So whatever astrology the old Egyptians might conceivably have known, it cannot be that which the Greeks attribute with such insistence to the "old sages" of Egypt (above, p 128), and which their disciples practise to this day.

To this irrefutable argument the apologist of modern astrology can, of course, always answer that the hoary old wisdom, the "overwhelming mass of experience" upon which the traditional system claims to be based, is really that of the "Chaldeans"—i.e., of the Babylonian star gazers who did observe the planets—at least three of them (see p 83 and p 188)—from the beginning of the third millennium and had both a "female" planet sacred to the goddess of love—our *Venus*—and a planet of death and destruction, fire and fever, blood and war—our *Mars*.

But to this evasion there is another answer, just as devastating and final as the argument against the claim based on the alleged age of Egyptian astrology.

We have actually in the British Museum alone, not to mention other collections, about four thousand astrological tablets—complete or in fragments—all of which have been read cursorily and catalogued by the late Prof. Carl von Bezold, who was specially interested in astrology and wrote the relevant chapter in Franz Boll's book on the subject. About one fifth of the

tablets have been carefully copied and edited by Charles Virolleaud and other scholars. Not one of them contains a single "horoscope" or other forecast for an individual person such as have been produced in masses ever since the Hellenistic period and have survived in numbers on papyrus fragments.

We have actually two real horoscopes in cuneiform script on clay-tablets, the one a birth- the other a conception-horoscope. The one is dated "*Adar* 30th 169 B.C., reign of Demetrios," the other "*Nisan* 4th" 176 B.C. Thus both belong to a time when Babylon, Harran, Uruk, etc., had become Hellenised cities in the ruins of which Greek inscriptions have been dug up in numbers by modern excavators.

The late Father Franz Xaver Kugler's (S.J.) discovery that one of the two tablets must be a conception-horoscope tallies very well with a statement of Vitruvius reporting that a disciple of the Babylonian Berossos—the priest of Bel who emigrated to the Greek island of Cos (c. 280 B.C.) and was commemorated by a statue "with a gilt tongue" in Athens—by name Achi[ba]nopolus (*i.e.*, Babylonian *Ahi-[ba]n-apal*) substituted conception-horoscopes for the older "nativities."

The complete absence of any "nativities" in the old Babylonian astrological tablets, which are exclusively concerned with the impending fate of king and country, and wholly unconcerned even with the "horoscope" of the ruler himself; which indeed, have not even a word for "nativity" or "horoscope," and the appearance of such texts in Hellenised Babylonia, show conclusively that the whole art of casting horoscopes is an invention prompted by the European, exclusively occidental individualism of the Greeks. The idea that the eternal star-gods could be intimately concerned with the fate and character of every Tom, Dick and Harriet—"so many gods battling over one head" (*tot circa unum caput tumultuantes deos*), as the philosopher Seneca says mockingly—could never have occurred to any Assyrian, Babylonian, or, for the matter of that, Egyptian or Ethiopian.

It follows that the claim of the various "Chaldean" and "Egyptian" star-clerks writing in Greek for a Hellenised public able and willing to pay for "nativities," to base their forecasts on the secular, nay, millennial experiences of their respective ancestors, was and is no more than a good, healthy, bouncing lie. Never at any time did an early Sumerian, Assyrian, Babylonian or, for the matter of that, an old Elamite, Hurrite or Hittite astrologer writing in cuneiform script on clay-tablets

ever establish any relation whatsoever between the position of the planets in the various zodiacal signs and the fate or character of any individual child—royal, noble or plebeian—born or conceived at a given hour

The rich library of King Assurbanipal, the remains of which are in the British Museum, contained copies of all the texts which this most book loving and most learned of all Assyrian kings could bring together by means of an extensive correspondence with all parts of his vast realm. If this passionate collector could find nothing of the sort, this is conclusive evidence that up to this time—*i e.*, the time when King Necho the Wise had Assyrian cuneiform tablets translated into Egyptian for his libraries in Sais and Memphis—no such procedure as the casting of a nativity diagram or a conception-horoscope was known to any one of the Mesopotamian star gazers

The Scriptures of the Jews—which show in the "*Benedictions of Jacob*" (*Genesis* xlix) and in *Deuteronomy* iv, 19 the most unmistakable influence of Babylonian "astro-chorography" (political star forecasts for countries), as well as in the "night visions" of Ezekiel and Daniel a perfect knowledge of Babylonian and Assyrian star worship and astral symbolism—betray not the slightest acquaintance with the art of "genethliological," individual astrology. This proves with equal evidence that all through the late Babylonian and Persian period this practice was wholly unknown, simply because there was no need for the organised guilds of star worshipping priests and star gazers living undisturbed at the big sanctuaries of Mesopotamia, Elam, Persia, Syria and Asia Minor and serving the ruling monarchs in silence and dutiful obedience, to come out on the market and cater for a clientele of private customers, interested in their own moral character or in the vicissitudes of their own petty fortunes

Actually no trace has ever been found in the tens of thousands of private letters, business contracts, etc., written in cuneiform signs on still existing clay tablets, of private persons—say the great bankers Murashu and Sons or Egibi Brothers—ever having had any dealings with any contemporary astrologer. All the existing letters and reports of Assyrian astrologers, carefully edited and translated by the late Prof. Reginald Campbell Thompson, are without exception addressed directly to the King's Majesty. Indeed, the tablets teaching the "royal art" are all marked as confidential, "not to be read by the non-initiated," and there is every reason to suppose that the private

Babylonian and Assyrian was never told by the priestly monopolists of all science how they set about it when they attempted to forecast the future for king and country. The very nature of the often deeply disquieting political forecasts submitted to the king make it evident that they were as closely guarded official secrets as the most confidential reports of the British Intelligence Service that ever reach Whitehall. The general public of Nineveh, Babylon, Ur, Erech, Susa, Persepolis can have had but the vaguest notions of the methods observed by and the principles guiding the *pro tempore* Astronomer Royal and his junior assistants.

Not until such catastrophes as the fall of Sardis or the fortunes of war in the wake of Xerxes' defeat at Marathon and Salamis drove the one or the other learned star rede into exile, or subjected him to the tragic fate of a prisoner of war in the hands of the slave-owning victorious Greeks, did a situation arise in which such a man could and would be driven to curry favour with his masters by fortune-telling after the secret methods which had until then served none but the great rulers of the Oriental monarchies.

The "Chaldean" said to have foretold from the stars Euripides' brilliant future to his father, the "Syrian mage" who foretold a death by violence to Socrates, Plato's "Chaldean guest," the Chaldeans whose meteorological forecasts are accepted while their birthday prophecies of individual destinies (*prædictio et notatio cuiusque vitæ ex natali die*) are rejected as fantastic by Plato's friend Eudoxus, while Aristotle's pupil Theophrastus is apparently deeply impressed by their art, must have been "refugee scholars" dependent on any favours they could obtain from their Greek masters. Nothing could be more natural than that they should try to earn first their freedom, and, once freed, a livelihood by teaching what they knew and by practising as physicians, physiognomists—one of them analysed the features of Socrates—soothsayers, exorcists and magicians. While educated Greeks like Plato, Eudoxus, Theophrastus would esteem them for their astronomical and mathematical knowledge, the uneducated "demon-dreader" so amusingly described by Theophrastus would be the predestined paying client for all the superstitious magic practices which the philosophers would have rejected with contempt.

If Plato's Oriental guest was the Persian Mithradates known to have dedicated a portrait bust of the master by Silanion, a copy of which is in Berlin—"Chaldaios" meant at the time

in question not more than "astrologer"—he must have made a lot of money out of his Athenian clients and patients

If Theophrastus admired the Chaldean forecasts of each man's life and death, the Chaldeans were apparently not slow in appreciating Theophrastus' method of analysing "characters" and in utilising this new psychological achievement in their descriptions of planetary types (below, pp 173, 179 ff) It is not from cuneiform tablets or hieratic papyri that they could learn to characterise in this way the principal actors on the celestial stage, but from Greek philosophers who learned to analyse human character from the great tragic and comic poets of Athens It is from the Pythagorean teachers of geometry and geometric mysticism that they learned to introduce a systematic consideration of the "angular aspects" and to delineate impressive polyhedral diagrams (fig 42) *pour épater les bourgeois*, who had read with respectful awe—from the outside—the inscription over the door of the Platonic academy "Nobody ignorant of geometry should enter under my roof" (*oudes agēōmetros eistō mou tēn stegen*)

XXI

BABYLONIAN AND GRAECO EGYPTIAN PLANETARY THEORY

Now that modern Assyriologists have succeeded in deciphering and understanding completely the cuneiform texts concerning Babylonian and Assyrian star lore, it is possible for the historian clearly to distinguish what the Greeks inherited and what they themselves—or these Hellenised Chaldeans—added to the traditional esoteric wisdom of the Orient before they published the alleged old mystery lore for the use and abuse of the hitherto uninitiated

The original planetary Babylonian texts are much simpler, more prosaic and less fanciful than anything the Greeks wrote about the planets and their gods The Babylonians called the planets (above, p 162) by the Sumerian term *LU BAD*, explaining *LU* as *bulim*, "sheep" (fig 27c) or "goat"—i.e. "small cattle"—*BAD* being Sumerian for "to go away," "to stray" The "capricious" apparent movements of the planets (figs 33, 44, 45), going forward, standing still, turning round again, etc

etc., were obviously interpreted as the wilful caperings of these gods or celestial beings whom the Greeks called *planētai* (*astéres*), "erring" or "straying stars" or occasionally "errant gods" Like all stars, for them the planets were gods.

The Babylonian sign for "constellation"—Sumerian MUL, Babylonian *kakkabu*, Hebrew *kokhab*—is "three stars,"—the number three standing for the plural in general, while the term god is written with the sign "star" in the singular So "god," "star" and "above," "high up" were for the Mesopotamians much the same thing The great "Plough star" catalogue shows that the stars were regarded as "aspects" (*utulu*) of certain great anthropomorphic gods of a pre-existent pantheon But they were not identical with these gods, who could be "seen," "observed" in many other (fixed) stars as well Therefore the early Greek astrologers always speak of the "star of Zeus" (=Jupiter), "of Ares" (Mars), etc., never of "the planet Zeus," "the planet Arēs," as do the later and the modern astrologers There is every reason to think that the planets were not thought of as divinities in human shape, but as animals, the gods being imagined as standing upon them, as Oriental art often shows anthropomorphic divinities standing upon or above their animals, and as the old Hebrew god Yahveh is described by the Psalmist as "riding upon the cherub" or "upon the cherubim"

The sign BAD in LU BAD can also be read *tertum* (i.e., the Hebrew *torah*), "oracle," "omen" LU BAD can also be read *nabu* "proclaimer," "herald," translated by Democritus of Abdera in his lost book "*On the Sacred Scriptures in Babylon*" as *hermeneis* "interpreters," viz. of the will of the gods

The planet Venus, and occasionally the planet Mercury, are both called in Sumerian DIL-BAD—transcribed *Delebatos* by Democritus—which reads in Babylonian *nibu* "herald," "proclaimer" In a Neo-Babylonian incantation, now in the Louvre, Venus is called *nabat kakkabē*, "the radiant," "the shining one of the stars," obviously because the evening star appears before the other stars The Sumerian name for the planet Jupiter is SAG-ME-GAR, "chief oracle giver" It is also called MUL-BABBAR, the "white star" (*Molobabar* in Democritus), or *Nibiru*, "the transient," when it is about to cross the meridian

The planet Saturn was called LU BAD SAG-USH, "planet *Kaawanu*" (Syrian *Kewan*, wrongly pointed *Khuun* with the vowels of *shukluz* "abomination" in the Hebrew Bible), translated into Latin as *assiduus*, the "constantly plodding one," by Hyginus, evidently because of its slow, constant movement It

was considered, as Democritus, Plato, Eudoxus, Eratosthenes, Simplicius and other Greeks knew well, as the nocturnal representative of the sun god, the "star of the sun" (*kakkab shamshu, heliou astēr*). It does look as if some early Sumerian star-rede had imagined the to us very strange idea that the sun rose again after sunset having passed through a dark tunnel in the mountain of the north and coming out of it so far away from us that it looked quite small, and that this far distant sun was Saturn. Apparently the Egyptians believed all the five minor planets to be far distant "little suns" (*Horuses*, above, p 162), so there is nothing so very strange about this curious Babylonian theory. The reader will, of course, remember that for the modern astronomer it is the "fixed stars" which are described as distant suns emitting their own light, while the planets—illuminated by reflected sunlight only—could properly be defined as far-distant moons or satellites of the sun.

The planet Mars was called in Sumerian ZAL-BAD-ANU transcribed *Zeibat(an)os* by Democritus), which the Babylonians translated *mushtabaru mutanu*, "satiated by corpses"—whence the Latin equation with Mars (*Mavors, Mauors, Mors*, above, p 163), or "he who constantly portends evil." Being red, it was considered as an aspect of the god Nergal, destroying mankind by wars, fevers, inflammations, prairie- and rush fires.

Mercury was called (fig 24) GUD UD, *shahit*—*Sekhes* in Democritus, meaning "Bull of Light," "shining bull," evidently because in the clear, dry atmosphere of the Mesopotamian steppe the sharp eyes of the star gazers who named and thus, apparently, could see the five satellites of Jupiter (as one of the servants at the Pultava observatory is known to have done), were able to observe the phases of Mercury and notice that it occasionally shows "horns" like the crescent moon. GUD UD is explained as *mushtaddallu*, "the messenger." The cuneiform signs could equally be read *mushtar ilu*, "the buyer god," which is the exact prototype of the Latin *Mercurius*, the god of merchandise (*merces*), the "marketing" or "market god," Greek *Hermes agoraios, empolaios, palinkapēlos* ("he of the market place," "the buyer," "the retailer").

Venus, called DIL-BAT, "herald," is also named *snishat*, "the female" (*Ishtar*), *ilat shumetan*, "goddess of the evening star."

No Babylonian text has been found grouping the "seven planets" in the order of their distance from the earth, as the

Greeks counted them. As a matter of fact, they do speak of "seven planets," but group sun and moon together and the five *bibbu* in a second group. They believed—as did the Persians and early Ionian Greeks after them—that the sun and the moon moved above the five planets and these again above the fixed stars.

The planet Jupiter is regularly included in the lists of the "stars in the wheel of *Anu*"—i.e., "the sky-wheel"—while the others are counted as part of the "wheel of *En lil*,"—i.e., "the wheel of the Lord of the Air" or "Wind." Apparently Jupiter's orbit was believed to circulate "in heaven" while the other planets were believed to move through what we now call the atmosphere, the upper air region from which the winds were supposed to blow down. This is probably the reason why the Romans of the Imperial age, influenced by Syrian astral theology call Jupiter *summus exsuperantissimus* while the contemporary Greeks speak of *Zeus Hypsistos*, the "Most High God" 'El 'Eljōn.

Astrological observations recorded *Molobabar's*—i.e., Jupiter's—rise in the various months of the year, especially noting them on the first day of the month and at the end of the year. His position relative to the Equator and the ecliptic, his disappearance in the East were duly registered, as well as his complete disappearance during a whole month of the year. He could occasionally be seen amidst a "court" of stars.

His brilliance was measured in the course of the year as diminishing or increasing, records were taken of his light scintillating with a yellowish or whitish hue, shining "like a torch," or dominating that of all the other stars. His position relative to other stars, his entrance into a lunar halo, his approach to a certain constellation—e.g., *Sagittarius* or *Aquila*—his conjunction with Venus was observed. When he stood close to Saturn, the two luminaries were called "the two great stars," in contradistinction to the term "the two stars," which seems to have been applied to the lesser pair Mars and Mercury. Jupiter, too, could "represent" the sun in certain cases and be "represented" in turn by certain fixed stars (above, p. 169). Different names were used for Jupiter according to whether the planet was in its progressive or retrograde (apparent) movement or in a "stationary" phase (below, p. 231, fig. 44) or about to cross the meridian (above, p. 169) at midnight.

The most extensive observations preserved in our extant records are those directed towards the planet Venus (Sumerian

MUL DILBAT) Before 1700 B.C. the Babylonian star gazers of the time of King Ammizadugga had recognised the identity of the morning and the evening star (*Hesperos* and *Phōsphōros* of the early Greek poets). Special attention was paid to the rising of this planet on the first or fifteenth of the month. Its variable declination, its rise to the neighbourhood of the zenith, its disappearance in the East and in the West, its "inferior conjunction," its invisibility lasting from one to two months, and its "renewal"—i.e., its heliacal rise—were recorded. The intensity of its light when it set or rose was interpreted yellowish or white brilliance, visibility in daytime were considered worthy of the star gazer's attention, who noted the proximity of clouds of various colours in the neighbourhood of the planet not less carefully than the direction of the prevailing wind (all of which he would not have done had he not believed that Venus was moving about within the atmosphere). Venus was observed as approaching other planets such as Jupiter, Saturn and Mars, as "taking unto herself" other stars and "dominating" them. She might stand just above the Pleiades—i.e., the "hair" stars (*zappu*, fig. 20, originally the brush of the Bull's tail). In that case she is said to "grow a beard," a curious idea which gave rise to or reflected the belief in an androgynous "hermaphrodite" divinity, the bearded Venus, worshipped even in the Greek period—e.g., on the island of Cyprus. Originally the evening star was considered a female, the morning star a male divinity. When both were seen to be identical, this one planet was believed to be bisexual.

Like the moon, Venus can put on various "crowns"—a yellow, a red, a white, a black or a "sun crown"—presumably through standing close below various other planets, the yellow crown being probably meant for Mercury, the red one for Mars, the white for Jupiter, the "black" or "sun crown" for Saturn considered as the sun of night time (above, p. 170). Just as Mars had seven names ('The Wicked One,' 'The Enemy,' 'The Fox,' 'The Elamite,' etc.), and was therefore called the "Planet of the Seven Names," so Venus had several names, according to the months of her visibility.

We have fewer observations for the three other planets. Saturn's opposition with the moon—symbolically corresponding to the "equilibrium" (*shutqulu*) of sun and moon "in the balance" on full moon day, because Saturn was "the sun's star"—had particular significance. As to Mercury, the *baru*-priests observed his monthly disappearance and reappearance—

"like a living being," they say, meaning, presumably, like some traveller going abroad and returning again—also his conjunctions with Venus and Saturn

As to Mars, his rising, setting, disappearance from the sky, reappearance, curiously enough "after seven, fourteen or twenty one days," his position relative to the equator, the apparent changes of his luminosity, his position with reference to Venus, Jupiter, Mercury were all carefully noted. In general, two planets opposite one another were said to "speak" to one another. Also each planet could be represented by a number of fixed stars thought to have similar colours, a theory which survives down to the star catalogues of the seventeenth century, *e.g.*, in Bayer's *Uranometria* (1603) still stating the "planetary" character of all the important fixed stars.

No cuneiform text contains the slightest indication corresponding to the psychological characteristics attributed to the planetary divinities by the Greeks, who had—ever since Homer's poems—developed quite precise ideas about the particular *ēthos* of their gods.

The Babylonians considered all the planets as "goats" and prone to "straying", we should say "capricious", one of them, more "constant" (*kaiawanu*) than the others, one of them a wicked, fire-breathing goat like the fire-breathing she-goat *Chumara* of the Lycians and Greeks. "Capricious" movements need no theoretical explanation. The "stray goats" run forwards and backwards just because they wish to. They hint thereby at the intentions of the gods, just as any animal or bird which the hunter meets on his left or right hand, in the west or the east, becomes, through its apparently casual behaviour, a portent or oracle. In so far as they were demonic, celestial beings, they could influence men, animals, plants, stones by magic "action at a distance"—again simply by wishing to do good or harm to whom or what they liked or disliked.

Originally, planetary star-gazing was nothing but the obedient observation of the unfathomable caperings of these capricious beings. But the unfailing regularity observed in the general movement of the "herds" (Greek *agelai*) of the stars, "herded" by the god Marduk, suggested very soon to scribes keeping careful records that there might be a calculable periodicity in the movements of the planets too. We know that the periods of the various planets were carefully observed, measured and calculated so as to make "astronomical" forecasts of their movements possible, and that thus—from about 700 B.C. downwards—the

foundations of a scientific analysis of the star clock and star-calendar movement were well and duly laid at the various observatories in Mesopotamia.

Both lines of thought were congenial to the Greek mind. The real Indo-European "settlers" (*Hellōi*) entering into Greece from cloudy and Central Northern Europe had a general worship of the dark, clouded and occasionally blue sky, its lightnings, thunderings and rain, but no real astral worship, not even a developed worship of sun and moon. Aristophanes says explicitly that such cults are "barbarian"—*i.e.*, alien to the true Greek spirit. But the pre-Hellenic population had an astral religion of some sort, as the Cretan and Mycenaean finds clearly indicate, and it is understandable that the common people, descended from the older inhabitants of the land, were furious when Anaxagoras, the friend of Pericles, declared that the sun and the planets were just so many white- or red glowing stones. The action for blasphemy which drove the philosopher into exile proves that the people—as their language shows—thought *Hēlios*, the sun, a god, and *Selēnē*, the moon, a goddess, *Hesperos* and *Phōsphoros* two divine torch bearers lifting up or dipping down their burning flares.

For Plato—a Codricle, *i.e.*, a scion of the pre Hellenic kings of Attica—the stars were "visible gods," and even for Aristotle, who imagines a complicated system of spheres turning within spheres to account for the apparently irregular movement of the planets, they are none the less divine beings. Thus it is not necessary to develop a physical explanation of how they can act at a distance, be it by their rays of light or by the "influences" they pour out, or merely by their aspect. They do it "as amber attracts a straw, the load stone iron, as the glance of the basilisk kills, the aspect of the Medusa petrifies and that of the wolf makes the victim mute."

On the contrary, it is essential to take into account all that is known about their personality from the myths handed down by the poets of old, in order to be able to forecast how they would behave in the present and in the future.

For the early Babylonians and Sumerians who had not yet learned to ride on horseback or to harness horses to chariots, the Sun-god *Shamash* had been an indefatigable foot slogging wanderer, climbing mountains, passing through gates in the morning and in the evening, carrying a saw (*shasharu*) (fig. 29) and producing not only the sawdust of tiny particles (*xusmata*) seen floating in a beam of sunlight illuminating a dark room but

also a continuous sound by rasping away at the firmament—a rather strident pre-figuration, well known to Jewish Rabbinic sky-lore too, of the Greek theory of the musical harmony produced by the movement of the spheres. Seeing everything from the height of the sky by day and night—in the latter period in his



Fig 29

aspect as Saturn, the “star of the sun”—he was able to sit in judgment over humanity, with two assessors, *Kittu* and *Misharu*, personifications of “Law and Justice.” Together with the equally male Moon god *Sin*, Sumerian *zu EN*, “the Wise Lord” or ‘Lord of Wisdom,’ in Persian *Ahuna Mazda* and with the Evening Star, he formed a triad often represented on top of Babylonian boundary stones.

Because in tropical and subtropical countries the life of man is carried on largely after sunset or before sunrise, the moon god is considered superior in rank and importance to the sun god. Similarly, and for the same reasons, Indian astrologers consider the Sun a maleficent, the Moon a beneficent planet. Here, too, the complete subjectivity and relativity of such qualifications and valuations is quite patent.

No such triad and no such pre-eminence of a lunar divinity were known to the Greeks. For the Greeks the sun god was a charioteer, and therefore supposed to hold the reins of the world (*hēniōchos tou kosmou*). He was believed, indeed known, to be the source of all life.

As Ernest Renan once observed: “The life of our planet has its real source in the sun. All force is a transformation of the sun. Before religion had gone so far as to proclaim that God must be placed in the absolute and the ideal—that is to say, outside of the world—one cult only was reasonable and scientific, and that was the cult of the Sun.”

In the Roman empire the motive power supposed to set in motion all the cosmic organism was believed to come from the Sun, which, therefore, was raised to the rank of supreme god. It was numbered, in the series arranged according to the distance from the earth, as the middle or fourth one (below, p. 210), with three above it—Mars, Jupiter and Saturn—and three below it—Venus, Mercury and the Moon. In other words, the Sun was thought to move in the midst of the heavenly spheres and to occupy the central position among the seven circles of the universe.

The other planets appeared to revolve round it, or rather to escort it, and astrologers delighted to point to the Royal Sun (Greek *Basileus Hēlios*) advancing in the midst of his satellites, as earthly princes, whose tutelary star he is, march encircled by their guards.

Further, the "Chaldeans" had thought out an original solution of a problem which caused much perplexity to ancient astronomers—namely, that presented by the irregular courses of the planets. They had observed that the apparent advances, stoppages, and regressions of these latter (figs. 33, 44 f.) were connected with the revolutions of the sun—in reality of the earth—and they had come to the conclusion that the sun governed their movements: the sun was as it were the dance- and chorus-leader (*Ba'al Markod, astrōn choragos*) who directed the rhythmic evolutions of the wandering stars. It not only drew in its course Mercury and Venus, which, as had been ascertained, were never more than a short distance from it, but it also regulated the movements of the three superior planets, and acted upon them by the force of its heat in much the same way as upon terrestrial vapours, which it caused to ascend or descend. According to the position which it occupies relatively to them, it impels them forwards, arrests them, or drives them backwards, and thus it does mechanically, exerting its power, like every astrological influence, according to certain angles or "aspects." Placed at the centre of the great cosmic organism, it animates the whole of it, as the heart supports human life, and both in scientific treatises and in mystic hymns men delighted to term it "the heart of the world."

"Thus the bright star of day, set in the midst of the celestial spheres, by the power of its heat vivifies the immense macrocosm through which its fires radiate. Henceforth it will no longer be celebrated, in verse and in prose, merely as the power which, besides light, brings to the world below warmth, fertility, and



PLATE XVI

a

- (a) The Sun in an UB ININ—Se en Regions symbol Greek HEPTA MUCHOS
 (b) Bal lon in d igr a n of astro cl orograpi cal t nes Cune form tablet found n Warka ow n the Mu de d Centena e
 (c) Br els Co rties of the D ector Mons eur Lou s Speleers
 The serpent ne move ent of the s n tl o gh he rod acal s gns a o nd a s a ue of he god of Unend g F e (Ch ones
 the os less a ~ an thn a o) fo d n a sanc ary of M t as A les

joy; the ancient conception is amplified and rendered more precise by the touch of science: the sun will become the conductor of the cosmic harmony, the master of the four elements and the four seasons, the heavenly power which, by the invariable changes of its annual course, produces, nourishes, and destroys animals and plants, and by the alternation of day and night warms and cools, dries or moistens the earth and the atmosphere. But, above all, in sidereal religion it will be that supreme regulator of the movements of the stars which at every moment inspires their ever-changing motions, that to which they owe all their qualities and perhaps even (as some believed) their light. Pliny already recognised it as the sovereign divinity which governed nature, *principale naturæ regimen ac numen*."

"But this universe, so well ordered, cannot be driven by a blind force. The sun, which directs the harmonious movements of the cosmic organism, will, then, be a fire endowed with reason, an intelligent light." While Pericles' friend Anaxagoras, the first Greek philosopher to teach that the universe is moved by an all pervading Mind (*Nous*), considered the sun a mere white-glowing stone, it is now regarded by the Hellenised Syrian theologians of the Roman empire as the reason which controls the world, *mens mundi et temperatio*. The most important corollaries will be drawn from this, for the Sun, the reason of the world, will become the creator of the particular reason which directs the human microcosm" (above, p. 94, fig. 23). "To it is attributed the formation of souls. Its glowing disk, darting its rays upon the earth, constantly sends particles of fire into the bodies which it calls to life, and after death it causes them to reascend to it.

"The sun, set in the midst of the superimposed planets, regulates their harmonious movements. As its heat impells them forward, then draws them back, it is constantly influencing, according to its various aspects, the direction of their course (below, p. 232) and their action upon earth. Fiery "heart of the world" (*kardia tou kosmou*), it vivifies the whole of this great organism, and as the stars obey its commands, it reigns supreme over the universe. The radiance of its splendour illumines the divine immensity of the heavens, but at the same time in its brilliance there is intelligence; it is the origin of all reason, and, as a tireless sower, it scatters unceasingly on the world below the sun-dust seeds of a harvest of souls. Our brief life is but a particular form of the universal life. Physical theories, applied to the movements of the planets to and fro,

will be extended to the relations of the King of the stars with the psychic essences which are subject to him. By a succession of emissions and absorptions he will alternately cause these fiery emanations to descend into the bodies which they animate, and after death will gather them up and make them reascend into his bosom" (*Franz Cumont*)

Children who have the sun in the ascendant will, of course, be strong healthy and perfectly happy. They will become rulers—emperors, kings, princes, nobles, army leaders, judges high officials, high priests occupied with the cult of the divinity, victorious sportsmen of all descriptions and generous nay prodigal distributors of gifts.

As to the moon, the Greeks believed it to be a female goddess Selēne (Latin *Luna*) for reasons discussed above, p. 138, its conjunction with the sun was interpreted as a marriage, the waxing from the new to the full moon as the swelling of her body in a period of gravidity. The waning, as well as the eclipses were interpreted as "maladies"—emaciation—and the monthly disappearances, as well as the occasional occultations, as the moon's death followed by a resurrection after three days. Needless to say how infantile such anthropomorphic interpretations of a mere play of light and shadow are in the light of what telescopic, telephotography and spectroscopy have revealed about the real nature of the earth's dry and waterless satellite pock marked with the remains of extinct volcanoes. To attribute either the female or the male sex and a sex life to the moon is about as scientific as the famous assertion ridiculed by Rabelais that it is "made of green cheese."

Because the Chaldeans—and the Phrygians of Asia Minor who worshipped a male moon god *Men*—believed the moon to be male, while the Greeks thought her female, Plato describes her as androgynous, participating in the (female) nature of the earth and in the (male) nature of the sun. Ptolemy says that the moon draws its—in reality non-existent—moisture from the earth its warmth from the sun, but he counts the moon simply as a feminine planet. Because ancient mythologists explained Artemis-Diana as a moon goddess, the moon assumes for certain astrologers—in spite of the popular "gravity" fancies—a character of virginal coolness and sterility.

Children having the moon in the ascendant will have thick haunches, thick knees, thick legs, beautiful eyes—the moon and the sun were often called the eyes in the face of the sky—effeminate faces and characters and good manners, a very

characteristically Greek deduction from the alleged female sex of Selēnē, which could not possibly be based on the "millennial experience" either of the Chaldeans or Egyptians, who both had male moon gods. They will have "fine flesh, a fine figure"—again like fair Selene—"full strength and symmetry" (corresponding to the symmetric full moon). They are "fleet of foot and like to wander about"—in Hebrew (and Egyptian) the moon is called *Yareah* "the Wanderer"—and are therefore useful as messengers.

The children of the "watery star" "governing Neptune's realm" will be fishers, sea captains, water millers, water-engineers, passionate bathers fond of swimming (because of the moonlight being often seen reflected in water), but also "fly by-night" swindlers, tricksters, jugglers (because the moon is "changeable" and can assume various shapes), madmen (*i.e.*, "lunatics"), but also agriculturists (reapers because of the sickle-moon), geometers (because of the halved circle of the moon and the "*meniscus*" figures it assumes), elders (because of the "old moon"), painters (painting was supposed to have been invented by a man drawing a line around a shadow, such as only the sun and the moon are seen to cast), marble workers (because the moon is white and marble is white), divorced wives of kings (because of the myth that the moon, having been married to the kingly Sun—above, p. 176—is soon abandoned by her spouse), mothers (the gravidity metaphor), boys without beards (because the face of the Greek moon goddess has no beard, although the great Babylonian "Hymn for Sin" described the "azure-blue beard" of the god).

Saturn, called the "steady one" (*Kaiawanu*) by the Babylonians, farthest away from the earth, and therefore supposed to be the highest in heaven of all planets, was identified by the Greeks with their old, deposed ruler of the gods Kronos (probably "the ruler," from *kraanein* "to command") who mutilated his father the sky god Uranos with his sickle-sword (the sickle-moon), but was, in turn, deprived of his power by Zeus (Jupiter). Probably because of his attribute, the sickle, the Romans identified Kronos with their own god Saturnus, the "Sower" or "Seedsman." Being the expropriated father of Zeus (Jupiter), he must be old. Being old, he must be wise and wily. Having been expropriated and banished, he must be bad tempered and resentful. Being farthest from the sun, he must be cold and—says Ptolemy—being farthest from the earth and her moist exhalations, he must be dry. Old, dry, cold, he must

move slowly (one of his revolutions takes about thirty years) Because the name *Saturnus* is connected with "sowing" (*sero, sevi, satum*), he is the patron of digging, of sowing and of reaping (with his sickle) Because of an old popular etymology identifying Kronos with *Chronos* ("Time"), and because of the Greek myth of Kronos eating his own children, he becomes the personification of the alleged generative and destructive power of time

If Saturn dominates a nativity and is favourable, he produces 'saturnine' people who cultivate their body and mind, deep thinkers, profound, severe, laborious, commanding and restraining characters, rich men fond of money (King Saturnus of Latium was believed to have struck the first coins), collectors of treasures, strong, egotistic If he is bad tempered, he produces sordid, mean, indolent, solitary, libellous and insidious cowards, calumniators, hermits (Saturn is withdrawn at the greatest possible distance from the earth and from men), people who love to complain (the deposed ruler), superstitious, fussy and finicky, cruel people, hostile to their own families (the eater of his own children), in every respect joyless, unpleasant and uncouth

The planet Jupiter was for the Babylonians an aspect of the god Marduk (*Merodach* of the Bible), a personification of the spring sun drying the soil after the inundations, restoring order from chaos, the slayer of the dragon, the builder of the celestial house and organiser of the world He produces storms as his weapons in the fight against the primeval monster Not much of this original character survives in Greek astrology

The truth is that Jupiter "is almost unimaginably cold. The amount of heat we receive from it shows that its temperature must be about 270 degrees below zero on the Fahrenheit scale. This is so cold that not only would water be frozen, but the commonest gases, like those of our own atmosphere, would be turned into liquids" (Jeans). Ptolemy, who had no means of knowing whether a star is cold or hot, and merely talks through his hat, says that Jupiter produces "fertile winds"—probably because he had read in Berossos the Babylonian story of Marduk producing "four winds," "seven winds," and because he believed a silly story—reported as "incredible but true" by the learned Roman public librarian Varro, a contemporary of Julius Cæsar—that the North Wind, Boreas in Homer's *Iliad*, xx, 223 ff., or the warm and moist wind Zephyrus, could make mares pregnant, and that there were no male vultures, the female vultures being impregnated by the "wind" (*ek tou pneumatos*), an infantile fairy tale quoted by the Church father Lactantius in support of the Christian virgin birth legend. In Ptolemy these "fertilising winds" are a rationalistic explanation of the many myths about human maidens bearing sons to their divine lover Zeus.

On the whole, the influence of Jupiter is, according to Ptolemy, "temperate, salutary and activating." Children of Jupiter will rise to judicial functions and high offices of state (because Jupiter rules this world and decides its affairs), become chief priests, accumulate wealth and act as arbitrators, etc., friendships with the great ones, rich revenues from fields and estates, ample presents, rewards, inheritances will fall to their lot, so that they will be able to live in ample wealth, they will have—like the god himself—many love affairs, adventures and children of love, many friends and social relations.

No attribute is bad enough for the astrologer to characterise the sinister influence of Mars. The early Greek invaders from the North were no pacifists. Heraclitus of Ephesus writing at the time of the rebellion of the Ionian cities against the Persian empire, praises war as "the father of all things" with an enthusiasm that would have satisfied von Treitschke and the elder von Moltke. Yet, in Homer's *Iliad*, Arēs—originally "the Noble one" leading the lesser breeds in war—is on the side of the Trojans. He is treated with little sympathy, and is said to have been born in rough Thracia. When the Macedonian conquest had expanded the Hellenic world to the furthest limits to which it could aspire, the Greeks began to look upon war and

fighting as an unmitigated evil. For the Romans Shakespeare's "mailed Mars . . . up to the ears in blood" had never been anything but a god of death and devastation, although they did consider him as the father of their own ancestors Romulus and Remus.

The astrologers called him "the Fiery" (*Pyróeis*) and "the Flamboyant" (*Thouros*), and likened his rapid forward movement, interrupted by sudden brief retrogressions (below, p. 232, fig. 45b), to the fierce forward bounds and backward jumps of a fighter. His name *Arēs* was explained by the Stoics as derived from *an-arein*, "to kill." His adulterous love for the goddess Aphrodite—sung by Homer's *Dēmodokos*, the troubadour of the Court of the Phæacians—was a convenient mythological explanation for the conjunction of the planets Mars and Venus supposed to cause conflagrations because of the fury of the cuckold *Hēphaistos* (Vulcanus, the god of fire) when he discovered his own shame.

The Egyptian idea that the planet Mars was by no means a maleficent star lingered for some time in Græco-Egyptian astrology, explaining the red planet, not as *Arēs*, but as *Herakles*, the slayer of dragons and monsters, the benefactor of humanity. On the lion horoscope of Antiochos of Commagene (fig. 25) the planet Mars appears as *Pyróeis Herakleous*, "the fire-star of Herakles," the *Verethragna* of the Persians. But that was soon forgotten, for planetary astrology could not explain the many misfortunes besetting mortal man without a duly evil and pernicious influence radiated from heaven.

As to the children of this red glowing star, they are, of course, stokers, fire tenders, metal founders, smiths, locksmiths, soldiers from privates to generals, hunters, but also persons who shed blood professionally, like barbers, leeches and surgeons, robbers, perjured people, adulterers, rapers, torturers and executioners, they will suffer (or inflict) wounds and burns, hæmorrhages, fevers, suppurating ulcers, etc.

Venus has kept all the characteristics of the Babylonian *Ishtar* "*qadishtu ilani*," "the pretty lady of the gods." A feminine planet like *Selēnē*, the moon, she is equally a "watery star"—*Aphroditē*, "born from the foam" of the sea. But while the moon is "cool," Venus is moist and—because of her proximity to the sun—warm, and therefore favourable rather to fertility in plants, animals and men. Ptolemy gives her, like Jupiter a "temperate" character, receiving her warmth from the sun, her moisture from the earth. The truth is that the surface of this

planet is "distinctly too warm for comfort" (Jeans), and that—owing to the absence of oxygen in the atmosphere of this planet—no life except anaerobic microbes could exist on it. The visible surface of Venus and of Jupiter consists wholly of clouds so thick as to be totally opaque. Hence the white light of both, which astrologers explain as due to their alleged metallic substance (tin for Jupiter, copper, *cuprum*, "Cyprian" ore, evidently the whitened copper used for debased silver coinage, for Venus—*i.e.*, Kypris, the "Cypriote" goddess)

Children of Venus will be affectionate, coquettish, prone to flattery, kind, sociable, intelligent, clean, fond of dancing, easily influenced by bad examples, yet averse to all that is mean and ugly, patrons of all arts and with a talent for all of them, beautiful, keen on spectacles, vain, wealthy (*Venus vulgivaga* exercising successfully and profitably "the oldest of all professions"), they will have beautiful dreams, a rich imagination, will be fond of children (Venus inseparable from her Cupid), charitable, happy and, last not least, amorous. By profession they will be artists, weavers, tailors, flower growers and dealers, perfume makers, dyers, purple merchants.

If the planet is ill disposed it produces effeminate weaklings, the playthings of all erotic passions, cowards (Aphrodite in the adventure with Diomedes in the "Iliad"), prostitutes, panders, pimps, procuresses, brothel-keepers, bullies, etc.

The planet Mercury, dedicated by the Babylonians to their god Nebo (Nabu = "the prophet," "herald"), the god of wisdom and patron of the scribes and scholars, was originally attributed by the Greeks, or rather the Graeco-Egyptian astrologers, to the oracle god Apollo.

The epithet misread as the "Buyer god" (*mushtar ilu*) for the planet of Nabu, the patron of writing, and therefore of all written contracts of sale and purchase, led, however, another school of star clerks anxious to please the merchant population of the Greek towns, to explain the tutelary divinity of this planet as Hermēs (Mercurius), the god of the market place (above, p. 170). The nature of this swift "messenger" and "herald" (= *nabu*) of the gods seemed more appropriate to the rapidly moving planet hovering constantly in the neighbourhood of the sun, as if he were the god's runner and errand boy.

Ptolemy is at great pains to determine the physical nature of this planet as "able to moisten as well as to dry" (!). Being so near the sun, he is always thirstily avid of moisture, which he

drinks in whenever he gets near enough to the moon, the "watery star," until he is saturated with it

In reality, Mercury is so hot that lead would melt on the side of its surface turned to the sun, while all ordinary liquids would burn away. Spectroscopic analysis shows its surface to consist of volcanic ashes just like that of the moon and of Mars. "A 'place in the sun' on Mercury is just about as warm as a place on a grill over a hot fire" (Jeans). So, if Ptolemy's "astro-physics" had had any connection with reality, Mercury and not Mars should be the "hot and fiery" planet.

The children of Mercury will be good looking—like the famous 'Hermēs' of Praxiteles—ingenious, sensible, knowledgeable, experienced and able inventors, gifted in mathematics, science, occult lore, paper makers and reed pen cutters, scribes and orators, interpreters (*hermeneis*, cp *Hermēs*), heralds, merchant-princes and hucksters, grocers and money-changers (taking after the Babylonian patron god of learning, the god of scribes, and therefore of all contracts, buying and selling).

If the god is ill disposed, he produces thieves (like Hermēs in the Homeric hymn to the god stealing even as a baby in arms), robbers, swindlers; forgetful, provoking, empty, changeable fellows (Hermēs as the wind god), mischief makers, liars, sinners, lazy-bones, shiftless people, inconstant and unreliable, avaricious (the merchant god) and unjust.

The pedantry with which ancient astrologers such as Ptolemy, Vettius Valens, Antiochos, Firmicus, Rhētorios, etc., have elaborated the planetary forecasts of a man's future calling to the last detail is so comprehensive and painstaking that their writings have recently become, under the diligent scrutiny of M. Franz Cumont, a most important source for the study of Hellenistic economic life and professional organisation.

A few examples taken from Ptolemy's chapter on the subject—the basis of all the later tradition—will show the reader how much method there is in this midsummer madness. Ptolemy considers—beside the position of the sun at the hour of birth—especially the planets Mercury, Mars and Venus in their upper culmination (Mid Heaven).

If Mercury dominates entirely, the child becomes a scribe, grammarian, calculator, teacher, merchant, banker, money-changer or -lender, seer, astrologer, priest, sacrificer—in general, a person who has something to do with writing or giving and taking. If Saturn stands near by, Mercury produces stewards of other people's fortunes or estates, interpreters of dreams,

people deriving their livelihood from a sanctuary—*e.g.*, as interpreters of oracles. If Jupiter is in the neighbourhood, Mercury produces legislators, orators, sophists and people serving the great ones.

Mars and the Sun in combination produce the poor devils working in excessive heat, such as bakers, cooks, metal foundrymen and smiths, Mars alone makes steel or iron workers, naval shipbuilders, military architects, stone cutters and quarriers, wood cutters (because they all work with iron instruments) and servants (because of military "service").

These astral rays are modified if Saturn mixes them with his own: then you get sea captains, aqueduct-builders, mine workers, bath attendants and cooks.

Venus and Mars together give rise to a dyer, an ointment seller, a tinner, a lead, silver- or gold smith, but also a navvy, a sword dancer, an apothecary or a physician. With Saturn's rays thrown in, you get a worshipper of sacred animals, an embalmer of corpses—we are in Egypt—a wailing man or woman, a flute player, attending funerals, or an enthusiast joining a cult connected with self mutilation or gashings of the flesh (worship of Cybele and Attis or Ma Bellona). If Jupiter supervenes, you get Egyptian *hierostolistai* (dressers of divine statues), diviners observing the flight of birds, temple servants carrying sacred vessels, overseers of harems, matrimonial agents, panders, pimps or such enviable people as "Epicureans who enjoy their life and are impervious to fear."

The position of the said stars in the Ascendant or in the Descendant decides whether the more exalted or the more lowly vocations among the various alternatives will be followed by the newborn child.

It does not need very great perspicacity to see that even Ptolemy, who makes such a show of replacing the mythological characters of the planetary divinities by the various combinations of Aristotelian "primary qualities," bases all these forecasts not on his astrophysical pretences, but on his unavowed mythological reminiscences. Where he argues as a physicist, his arguments are as illogical as they possibly could be. Thus he chooses to exclude from his horoscopes the stars below the horizon because their light rays would have to pass through the earth in order to reach the newborn child. But he apparently forgets that even the most potent irradiations—the rays of the sun—can be completely shut out by the thinnest wall, and even by a sufficiently opaque curtain. So the baby in question would

have to be born in the open air, or at least before a window open towards the East, one towards the West, and under an opening in the roof towards "Mid heaven" in the South, in order to be struck by the fatal astral rays that even he takes into "consideration" (N B an essentially astrological term¹)

It is clear that those astrologists who went on calculating nativities after Ahībanapāl (above, p. 165) had introduced conception horoscopes did so because they thought that the embryo was sheltered by the mother's womb from astral rays and only became exposed to them after the child had been born into the outside world

So there is really no logic whatsoever in the "physical" theory supposed to explain astrological influences. They cannot be conceived otherwise than as magical "actions at a distance" of the planetary divinities endowed with demonic power. Why, however, on this hypothesis, the angle of the incidence of the rays should make any difference, or why the thickness of the earth should ward off rays supposed to penetrate walls as well as the maternal body, we cannot imagine. So anyone willing to believe in the fundamental dogmas of planetary astrology must profess—if he or she claims to think logically, which of course fools and feeble-minded persons do not and are not expected to do—a staunch belief in the seven pagan divinities supposed to confer their own spiritual and bodily characteristics upon the seven planets. If he or she professes to be a Christian—as so many medieval and Renaissance popes and princes of the Church claimed to be in spite of their reliance upon their private astrologers—they must suppose the planets to be ruled by good and bad angels or demons moving these stars about, and assume that these angels have inherited the characteristic qualities of the old pagan gods. Or they can resort to the convenient expedient of saying that the spirits—good or evil—entrusted by the Creator at the beginning of time with the task of moving the planets in their orbits are actually the very celestial beings whom the benighted heathens worshipped as gods, instead of reserving their adoration for the Creator of both the stars and the star demons. They will easily find biblical and patristic authority for believing that God entrusted the various nations to the government of planetary star patrons, and the individuals to particular guardian angels who are nothing but the planetary spirits dominating the hour of their birth. For the Zoroastrian Parsees all the planets are evil spirits in the service of Ahriman, the satanic adversary of the "wise lord" Ormuzd—just as the

Egyptians considered them all equally benevolent sun children (above, p 162) Contrariwise, the Parsees assume that the fixed stars—circulating regularly without “capricious” stand-stills and retrogressions in their orbits—are good powers and allies of the Good God

The one or the other of these various mythologies, angelologies or theologies will allow the devotees of astrology—a “divination,” *i e*, a religious forecasting practice based on a belief in star gods—to remain faithful to their convictions

The moment, however, they appeal to any physical theory, to physics they must go, and be judged by the standards of physical science That is to say, they must give up as absolute nonsense the whole theory of Aristotelian “primary qualities,” astral radiation or “influences” (“downpours,” *aporhoiai*) They must admit that no “moisture” in any quantity whatsoever can either reach the planets from the earth or the earth from either the moon or any planet They cannot go on telling us that the “cold” coming down from Saturn can make anything or any body on earth colder, drier or older than they are at any moment, since everything on earth is surrounded all the time by the vast, silent intensely cold depths of cosmic space which so frightened Pascal

As to the “infinitesimally” small amount of heat that can reach any point on earth from the “fiery” planet Mars, it is incomparably smaller than that supplied from some harmless more or less distant terrestrial source of red light Also, because of the atmospheric absorption, this quantity will be smallest, not greatest, when the star is in the Ascendant—*i e*, near the horizon

Finally, any wall, window pane or even the thinnest sheet of cloth will prevent it from reaching the newborn body at all, not to speak of the embryo enclosed in the maternal body, which is quite impervious to any radiation of warmth or light reflected from the planets On the contrary, the recently discovered, deeply penetrating cosmic rays which really reach us all the time from the depths of space were and are never taken into account by the astrologer Should the astrologer, with our ancient authors, compare the planetary influence to “the attraction of straw by amber”—*i e*, electricity—or to “the attraction of iron by the loadstone”—*i e*, magnetism—the simple answer to such a silly pretence would be that the modern physicist disposes of the most delicate instruments for detecting and measuring electro-magnetic disturbances in our atmosphere, and that such

disturbances are known to come from the sun, but not from the planets, which only reflect the sunlight, and send out no specific radiation of their own

XXII

THE PLANETS, "IN THEIR HOUSES" AND THE MYTHICAL CREATION OF THE WORLD

THE application of the term "houses" (above, p. 36 f) to the twelve imaginary sections (*topoi, loci*) of the sky through which the equally imaginary twelve sectors of the "movable" ecliptic are supposed to revolve is a comparatively modern abuse. The ancient astrologers called "houses of the planets" (*οἶκοι, dōmata, purgoi*, Latin *domus*, Arabic *al burug*, from the Greek *purgoi*, "towers") those zodiacal constellations in which the seven planets were supposed to be "at home" ("domiciled") because they stood there when the world was created—i.e., in the so-called *thema mundi* (fig. 31, p. 192).

The idea that the world was created on a certain spring morning, and that the creator, having built the sky, put the stars into their proper places, is, of course, derived from the famous Babylonian "*Creation Epic*," which tells us how the god Marduk placed "three stars for each of the twelve months" (the so-called "decans", above, p. 84) into the sky, fixed the *nubiru*—i.e., their "transit" through the meridian, etc.

(The post exilic Hebrew creation legend in the first chapter of *Genesis*—v. 14-18—has borrowed this tradition, which appears to have been quite unknown to both the Greeks and the Egyptians.)

We happen to have a cuneiform circular diagram (figs. 15 f) explaining the position of these "thrice twelve stars" in the twelve monthly sectors. This "planisphere" includes four planet names among the thirty-six constellations (above, fig. 16). Two of them (*Nubiru* and *Dapinu*) are known to belong to the planet Jupiter, the two others are "DIL-BAD," the well known name for Venus, and *Zalbatanu*, the equally familiar name of Mars. Mercury and Saturn are missing, and may be hidden behind two names of the constellations through which they are just supposed to be passing and of which they seem to become a part at this moment, as it were assuming their shape for the time being. Why they should be disguised in this way in such a

diagram, and also in the various lists giving these "thrice twelve" star names in the form of a mere table without the "spider web" diagram—resembling the *arachne* (spider web) of the later "astrolabes"—we do not know, with certainty. There might be a mythological reason—possibly some tradition about the later, separate creation of Saturn and Mercury recorded on one of the missing fragments of the "Creation Epic." Or it might be that the diagram of the "Three Stars for each Month" was composed at a time when only Jupiter, Venus and Mars were known, and the rather dim Saturn and Mercury—the latter so near to the sun as to be difficult to observe—had not yet been discovered.

Anyhow, we have in Greek and in Arabic a curious story entitled "*Foundation of the Art of Astronomy, (i.e., astrology) according to the Chaldeans,*" first published by the Benedictine scholar Cardinal Pitra, which may very well be a late Greek paraphrase of a lost cuneiform tablet similar to the *Creation Epic* and the story of "*Bel and the Labbu.*" The text tells us how the creator of the world made first "the big dragon," putting its head into the ascending node Ω , the tail into the descending node of the ecliptic and the lunar orbit \bar{U} . Then he made the twelve zodiacal signs and commanded the dragon to carry six of them—the six visible above the horizon at any time—on his back (The other six are supposed to be suspended from his belly). The whole description corresponds closely to what we find represented on the top of certain Babylonian boundary stones, adorned with the astral symbols of the divinities supposed to protect the land grants in question (fig. 30). Then the creator made the planets and placed them each in one of the six zodiacal signs on the back of the dragon, in the order discussed below, p. 199.

Then only he "throws" the glowing sun into their midst, which moves from the left to the right (we should say clock wise). Mercury takes fright and escapes in the opposite direction, the other planets do the same, fleeing from the glowing brazier. Saturn, who could not get away farther than one sign, was overtaken by the rays of the sun, burnt and dried out (above, p. 179), and this is why he became "black" (*i.e.*, why his light is rather dim). "And that"—the text goes on—"is the reason why each planet has two houses" (*οἰκοί*, below, p. 191) the one where it was placed by the creator, the other the sign to which it took refuge from the approaching sun. The moon, however, began to run too, even faster than the planets. In this way the

planets found out, after many deviations by trial and error, the places where they could "exalt" themselves to the utmost—*i e*,



Fig 30a

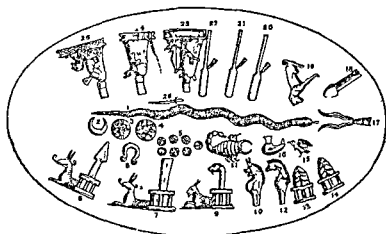



Fig 30b

get farthest away from the sun. These are their "exaltations" (*hupsomata*)

The cuneiform term corresponding to the Greek *hupsoma*, "exaltation," is *qaqqar nisirtu*, "secret place," "hiding-place,"

"refuge"—the spot where the planets went to take cover and to hide themselves from the burning sun. The "houses" are mentioned as *bēte*—singular *bētu*, or *parakkē* ("tents"), *pirke lakkabanu*, "tents of the stars"—and it is obvious that the Greek term *purgor*, "towers," was selected because it sounded like *pirke* and because *qaqqar nisirtu* can also mean "watching place," "guard room." Also, most of the Babylonian astral symbols represented on Babylonian boundary stones are placed upon square constructions which must represent "houses" or "dwellings" (fig 30), because they look exactly like the Sumerian pictograph  which means in Sumerian *E*, in Babylonian *betu*, "house." It may, therefore, be taken as very probable that the concept of "houses" of the planets, being the constellations in which they were placed by the Creator at the beginning of the world, and from which they started their courses when they were first set in motion—the *aphens* or "start" of the cosmic race, as the Greeks called it—does go back to a lost Babylonian creation myth surviving only in a Greek paraphrase. The details of it must be late, since it groups the planets in a particular sequence, said to be Pythagorean or to have been borrowed by Plato from the Egyptians, based on the period of their revolutions (below, p 210), and since it mentions the lunar nodes which were used by the Arabs and the Indians in their horoscopic diagrams as a sort of fictitious planets, Tertullian being the first witness for this use in Græco-Roman astrology.

In Warka, the ancient *Uruk*, the Biblical *Erech*, tablets were found (fig 20) which appear to show the moon together with Taurus—i e., in its exaltation (*hupsoma*)—and a star—inscribed *gud-ud*, that is Mercury—together with *Virgo* (fig 24). These tablets belong to the Seleucid period, and might therefore be influenced by the Greek astrological theory of "exaltations" (*hupsomata*). Fortunately a fragment of the big "Plough star" catalogue from Assurbanipal's library, now in the British Museum, provides the corresponding cuneiform statements, telling us that the moon has his "hiding place" (*qaqqar nisirtu*) in Perseus (*SHU-GI*) and the Pleiades—which are seen together with the moon—the reader will notice the Babylonian "Man in the Moon" between the Pleiades and *Taurus* on the Warka tablet (fig 20), also that Venus has its "refuge" in the Lion. The same star catalogue tells us that the "hiding place" of the sun is in "the Hired Man" (*KU MAL*, *Hun gar*), our *Aries*—that of Mars in *E(nzu)* = *Caper*, that of Saturn in *Libra*, that of Jupiter in *Cancer*. This is confirmed by the inscription

(SAG-ME)GAR = "Jupiter" beside the star seen on the left side of Leo, that is on the right side of Cancer on the tablet, fig 24. A cuneiform letter speaks of the *gaqqaru bit 'l Zalbatanu*, "the place of the house of Mars," and of "the house of Jupiter" (SAG-ME GAR). An Assyrian astrologer's report published by Prof Campbell Thompson (No 267) says that "the house of Venus" (*bit 'l DIL-BAT*) "disappeared in the light of the Sun, when (the Sun) reached the house of the Band (of the Fishes)," which corresponds with the Greek theory placing the "exaltation" of Venus in *Pisces*.

The Sicilian senator *Firmicus*—often mentioned already—actually tells us that the Babylonians call the "exaltations" (*hupsomata*) of the planets, their "domiciles," placing Saturn in *Libra*, Jupiter in *Cancer*, Mars in *Capricorn*, the sun in *Aries*, the moon in *Taurus* (fig 20), Venus in *Pisces* (above, p 107), Mercury in *Virgo*.

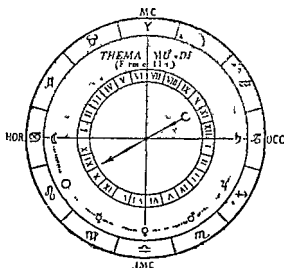


Fig 31

But the usual theory of the planetary "houses" based on the *thema mundi*—the original position of the stars at the creation (fig 31)—as we find it stated in Ptolemy, in Egyptian horoscopes on papyri of the time of the Antonine emperors, on Alexandrian coins of the eighth year of Antoninus Pius and in Lucan's *Pharsalia* (before A.D. 65) is in all probability derived from the textbook of astrology ascribed by the Greeks in Egypt to "Petosiris and Nechepso," the "sages of old" to whom Asklepios

(Imhotep, a sage of the 3rd Dynasty) and Anubis (the jackal-headed god leading the way to the other world) had revealed the "*thema mundi*"

This Neche p so is the founder of the 26th Dynasty, Necho the Wise of the seventh century B C (above, p 128), who brought cuneiform texts from Nineveh to Saïs and had them translated into Egyptian. As to Petosiris, his tomb was found in 1920 near Hermopolis. He proves to have been a high priest claiming almost royal rank and the role of restorer of the old religion after the chaos caused by a foreign oppressor—Artaxerxes Ochos—when "a new defender" of Egypt—Alexander the Great—had arisen (about 320 B C). Greek scribblings on the walls of his tomb bear witness that he was invoked by later generations as one who is now "amidst the gods, a sage among the sages" of old.

But the memorial inscriptions in Petosiris' tomb record no claim of his to have been proficient in astrology, such as we find inscribed on the statue of a certain Hor-kheb of the same century, a prince and "unique friend" (we would say "companion of honour"), an expert "skilled in the watching of stars and in the tracing of an astral rule of life (*sheser ankh*)" who made the country happy by his predictions" *ie*, ministering, as his modern colleagues do, to its wishful thinking—besides being—what he did not consider such an anti climax as we should—a charmer of scorpions and serpents.

If even a "prince" could thus proudly boast of his star-lore, and if the wise Petosiris or his heirs nevertheless keep silence on this point we must conclude that this high priest, too, was only chosen by a later anonymous Greek writer to figure, because of his legendary fame, as one of the speakers in certain wholly anachronistic dialogues between the sage and the equally famous, but centuries older, King Necheus or Nechepso, or as the writer of letters to this king—alleged astrological reports interpreting observed phenomena according to rule and alleged precedent, such as the extant cuneiform star gazers' reports to King Assurbanipal who was Nechepso's overlord.

These books were fathered upon the two "sages of old" by Greek astrologers—so ignorant of Egyptian history as to have believed them to be contemporaries—at some time between the years 132 and 22 B C, as we can see from the mention of the star Sirius rising on various days of the Egyptian month *Ephph*. The purpose of the forgery—or of the "pseudepigraphic book," as modern critics are wont to say in a more polite

and mealy mouthed way—was to place behind their own, in large part quite new fangled theories a national Egyptian authority of at least as much weight as the old gods Anu, Bel and Ea, and the ancient teacher Oannēs (*Iannes*, *Hani*, above, p 77 f), interpreting their oracles, invoked by their Chaldean rivals in the Seleucid Empire. It is evident that certain sufficiently Hellenised Egyptians wanted to utilise their star lore—inherited from the time of Necho the Wise and from the magi accompanying the Persian rulers of Egypt—by advising the new Ptolemean kings of Egypt in the same way as the great Chaldean astronomer Sudines was counselling Attalus I of Pergamon (238 B C) and as the astronomers of Babylon and Borsippa were advising the Seleucid successors of Alexander the Great.

These forgers who knew—presumably from Bērossos—something about the Babylonian creation story (above, pp 84, 89), and from some disciple of Plato, probably Heraclides Ponticus (c 388—310 B C), the order of the planets arranged according to their periods of revolution (below, p 210)—invented the *thema mundi*, the disposition of the planets at the time of the beginning of the world, as shown in our fig 31.

Firmicus himself, to whom we owe its detailed explanation, admits that the diagram is wholly artificial, since the world—as Aristotle and his disciples had been taught by Parmenidēs (sixth century B C)—can have no beginning and was never “created,” as the Babylonians taught and the Hebrews credulously repeated.

Even if it had been “created” on a certain morning at the vernal equinox, the question would have arisen how anybody could possibly know the initial positions of the planets in the zodiac. The answer was that the great mystery had been revealed by the gods of the Egyptians, Hermes Trismegistus, Anubis and Asklepios (Imhotep), and recorded by King Neche p so (seventh century B C) and the high priest Petosiris (fourth century B C).

The absolute inanity of this claim—the acceptance of which would imply a belief on our part in the real existence of these old Egyptian ibis and jackal headed gods—has been revealed by modern Egyptological research. It is an indubitable fact that in none of the old Egyptian monuments and in none of the more recent ones, such as the planispheres of Denderah and Esneh, has any definite sequence of the planets ever been found let alone the now customary arrangement according to their distance from the earth, deduced from the periods of their revolutions.

On four monuments of the 19th and 20th Dynasties the sequence is Venus, Mercury, Mars, Saturn, Jupiter, on a fifth of the same period we find Venus, Mercury, Saturn, Jupiter, Mars

In the Græco-Roman period we see in Edfou Jupiter, Saturn, Mars, Venus, Mercury, in Denderah Mercury, Venus, Jupiter, Mars, Saturn, on the Denderah planisphere, Mercury, Jupiter, Venus, Mars, Saturn, on the sarcophagus of the priest Heter and on a Græco-Egyptian papyrus the old order of the 19th and 20th Dynasties

No better proof can be asked for the assertion that the planetary series presupposed in the *thema mundi* of Petosiris and Nechepso was unknown to the Egyptian priests—who knew neither this nor any other fixed order—and that, therefore, it had never been revealed to them

The order in question was equally unknown to the Babylonians and their Sumerian teachers who invented the childish story of the creator god inserting the planets in a certain order into the sky which he built out of the upper half of the slain and dissected rebellious dragon of chaos

XXIII

THE SEVEN PLANETS AND THE ALLEGED NUMERICAL CORRESPONDENCE OF THEIR PERIODS OF REVOLUTION

WE have a Babylonian cuneiform list of what the Greeks and the Babylonians called the "seven planets" (VII *kakkabani* LU BAT), once in Assurbanipal's library in Niniveh, now in the British Museum. It is presumably much older, but cannot be more recent, than the beginning of the seventh century. The order given on this tablet is

☾	☉	♃	♀	♄	♅	♁
Moon	Sun	Jupiter	Venus	Saturn	Mercury	Mars

The pre eminence of the moon corresponds to the supreme rank of the moon god *Sin* of Harran in the Babylonian and Assyrian pantheon

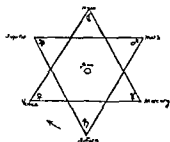
On a tablet written in the reign of Cambyses (c 550 B C) the order of the five minor planets is still the same as under Assurbanipal (𐎶 𐎧 𐎶 𐎶 𐎶). It would appear at the first glance that the close proximity of Venus and Mercury to the Sun is not noticed, and that the "outer" planets Mars, Jupiter, Saturn are not grouped together. But the Cambyses tablet mentions conjunctions

- (a) of the Moon with Mercury, Venus, Jupiter,
- (b) of Jupiter with Venus, Saturn, Mars,
- (c) of Venus with Saturn and Mercury

(The sun, mentioned in Assurbanipal's list with the six other planets, is not included in Cambyses' list of conjunctions because a conjunction with the sun makes the moon as well as the five planets invisible to the primitive observer's unaided eye.)

The sequence in which the conjunctions are enumerated can be immediately visualised if the five minor planets and the moon are grouped in a circle so as to form the hexagonal figure known to the Jews as the "shield of David" (*magen Dawid*) or the "seal of Solomon"

Figures of this type—heptagrams (pl xvi a), hexagrams and pentagrams—have been found on Babylonian clay-tablets. The hexagram is used in the alphabetic cuneiform script of the Phœnicians found in Ras Shamra for the sound *sh*, and has also been found on Minoan tablets from Crete by Sir Arthur Evans. The pentagram is a Babylonian pictograph for *ub=tupqati*, the Hebrew *tequphoth*, "tropical" or "cardinal points," Greek *kéntra kósmou*, Latin *cardines mundi*.



It is easy to see that our diagram groups in two "trines" (*trigonà*) Moon, Mercury and Venus—*i e*, the three planets nearest to the earth—and Saturn, Jupiter, Mars—the three "outer planets," counting both trines in the same direction.

If that is so, it means that the Babylonian star-clerks of the time of Cambyses knew the distinction between those of the planets which had, like the moon, a period of revolution shorter than that of the sun—*i e*, shorter than the solar year—and

those which had one longer than that of the sun (see below, p 198)

Since their sequence of the planets is identical with that used by the astrologers of Assurbanipal (above, p 195), it follows that they, too, distinguished these two groups. But the way they inserted the sun between the moon with its $29\frac{1}{2}$ day period of revolution and Venus with its period of roughly eight lunar months (below, p 199) seems to show that they had not yet drawn the conclusion that the relative distances of the seven planets from the earth must somehow correspond to the relative lengths of their period of revolution.

This seems to be confirmed by a cuneiform tablet of the Persian period showing still another order: Jupiter, Venus, Mars, Saturn, Moon (Mercury missing). The Babylonian astronomical tablets written between 400 and 7 B C all have Jupiter, Venus, Mercury, Saturn, Mars—an order explained by Father Kugler as based on mythological grounds. Saturn and Mars being the two *malefici*, Jupiter, Venus, Mercury (*Marduk*, *Sharpanitu* and *Nabu*) being considered as a trinity of Father, Mother and Son.

The relative distances of the "seven planets" from the earth were apparently not as yet known to the Assyrians and Babylonians when Cyrus the Great conquered his world empire. The Persians—and, following them, the Ionian Anaximander of Miletus—believed the sun's orbit to be the highest, then follows the moon, then the planets and the fixed stars. A passage in Diodorus derived from Democritus (c 460-370 B C) shows that the Babylonians still believed the "thrice twelve" fixed stars of the twelve months (above, p 83, fig 16) to be situated below the five minor planets, the moon again below the fixed stars at the time when the Abderite philosopher visited Babylon.

Plato was still so ignorant of the relative distances of the planets from the earth that in the original edition of his "*Republic*" he placed them—according to the reliable testimony of Proclus—according to the apparent size of their disks, assuming that the greater the bulk of the star, the larger its orbit must be. Thus he placed below the sphere of the fixed stars the "whorl" (*elakatē*) of the sun, below this that of the moon, below it those of Venus, Mars, Jupiter, Saturn (Mars when very near the earth can sometimes appear larger than Jupiter), Mercury (Saturn, already called the "dark" or "black" planet by the Babylonians, appears smaller than Jupiter, Mercury is actually the smallest of the seven). He corrected

this fantastic arrangement in the "*Timæus*" and in a second, revised edition of the "*Republic*," either on the advice of his Chaldean guest or—according to Proclus—following the example of Anaxagoras, the friend of Pericles, who had explained the sun and the planets as glowing stones

The order adopted in the "*Timæus*" is, counting from the sphere of the fixed stars downward

Saturn	Jupiter	Mars	Mercury	Venus	Sun	Moon
♄	♃	♂	♿	♀	☉	☾

This arrangement, approved by Plato's friend Eudoxus, by Aristotle, the stoic Chrysippos, and Eratosthenēs, has been found on an inscription in Rhodus and on a papyrus in Egypt. It is based on the Pythagorean reverence for the alleged numerical harmony pervading the world order (*kosmos*)—displayed already by the numbers distributed over the Babylonian star dial (fig. 16)—provided, as even ancient critics saw, that your numbers are sufficiently "smoothed out" for the purpose!

Thus Macrobius tells us that Plato, "following the Egyptians," assumed for Saturn a thirty years period of revolution, for Jupiter one of twelve years, for Mars one of two years, Venus and Mercury, as "companions of the sun," describing their orbits equally in one year. Starting from these figures, a curious numerical correspondence is seen to underlie the Anaxagorean or later Platonic order

♄	♃	♂	♿	♀	☉	☾
Saturn	Jupiter	Mars	Mercury	Venus	Sun	Moon
<hr/>						
30 years	12 years	2 years	12 months		30 days	

The moon's thirty days correspond to Saturn's thirty years, the sun's twelve months to Jupiter's twelve years, the two years of Mars being the equivalent of the one year of Mercury plus the one year of Venus

When these extremely "round" figures for the various periods were replaced at the hand of the later Pythagorans by those attributed to Philolaus— $29\frac{1}{2}$ days for the moon, $29\frac{1}{2}$ years for Saturn,



twelve months for the sun (the real figure is 365 26 days), twelve years for Jupiter (in reality 11 86 years), about twenty three lunar months for Mars, eight lunar months for Venus, three for Mercury, a new "Pythagorean" series $\zeta \circ \delta \varphi \delta \eta$ was introduced, possibly by Heraclides Ponticus (c 388-310 B C), a disciple of Plato, in which Venus and Mercury have changed places. In this the $29\frac{1}{2}$ days of the moon's period correspond to the $29\frac{1}{2}$ years of Saturn, the twelve months of the sun to the twelve months of Jupiter, while the orbit of Mars (twenty four lunar months, in reality 23 5 months) corresponds to those of Venus (eight lunar months) and Mercury (three lunar months) as $24=8 \times 3$.

This admirable method of discovering imaginary "harmonies" in an irrational world—in that *kosmos* or "world order" of which the pessimistic Heraclitus of Ephesus (sixth century B C) had said so bitterly that it has been "poured out like a rubbish heap" (*hōsper sarma kechumenon*)—can be traced back to the planetary scheme of Assurbanipal's star clerks.

If their apparently quite arbitrary series

ζ	\circ	α	φ	η	δ	δ
Moon	Sun	Jupiter	Venus	Saturn	Mercury	Mars

is diagrammatically represented in the shape of a heptagram (pl xvi) or *heptamuchos* ("seven corners"), as it is called by Pherekydes of Syros (seventh century B C), the *ubimin* (= "seven" *ub*) found in Sumerian inscriptions on one of the statues of King Gudea (third millennium B C), the rays of the star will be seen to connect the moon with its 30 or $29\frac{1}{2}$ days period with Saturn ($29\frac{1}{2}$ years' revolution) on the one side, the moon with a one month's revolution with Venus and her, according to Macrobius, one year's circuit. The sun with her twelve months' solar year is linked in another trine to Mercury, to which Macrobius gives the same period, and to Jupiter with its twelve years' roundabout. Still another trine consists of Jupiter (twelve years), Mars (two years=twenty-four months) and Venus (twelve months), $12 \div 12$ being 24.

This is at least as good or as bad "numerology" as we found underlying the planetary sequence in Plato's "*Timæus*" and the Pythagorean refinement of it. Since Egypt was, at the time when Plato and Eudoxus studied there, ruled by Persian governors, consulting Babylonian *magi* and already in possession of the Egyptian translation of the cuneiform tablets brought by King Nechepso from Assurbanipal's library to Saïs—which must

have contained such a list of the seven planets—Macrobius' assertion that Plato's and Eudoxus' planetary system is really "Egyptian" appears to be quite plausible.

The reader will see in fig. 31, p. 192, that it is precisely the series of planets corrected for the more exact determination of the planetary periods due to the Pythagoreans of the generation after Plato, with the sun between the moon and Mercury, which is presupposed in the *thema mundi* claiming to have been revealed by the Egyptian gods and sages of old and written down by King Neche p so (seventh century) and the high-priest

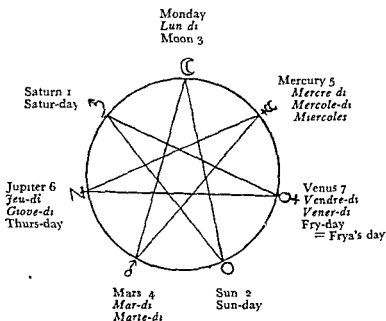


Fig 32

Petosiris, of the time of Alexander the Great! The fraud thus exposed would, of course, have been patent even if we were not able to show with such accuracy the real sources of every element in this wholly artificial construction, since this order of the seven planets does not correspond to the real distances of the seven astral bodies from the earth as we know them now and as they were actually taken into consideration a little later in the system of "time-rulers" (*chronokrátōres*) underlying our series of planetary names for the seven days of the week (below, p. 211)

Before we start to analyse this system we must throw just a

fleeting glance at fig 31, showing the completed system of planetary "houses" as it was derived from the *thema mundi* (p 192)

The allegedly revealed position of the planets in the zodiacal constellations of the "creation of the world"—most significantly coinciding in Petosiris-Nechepso's diagram with the beginning of the Egyptian year and the start of the inundation of the Nile when the sun is in *Leo*—explains why the planets have one "house" each. Yet there is no reason why each of the five minor ones should have two domiciles—one for the night, one for the day—while sun and moon must content themselves with one only, but the simple numerical fact that the ancients knew only seven planets, but twelve zodiacal signs, and that twelve "houses" can be divided up between seven inhabitants only by giving five of them two each and the remaining two one each ($12 = 2 \times 5 + 2 \times 1$)

The reason given by our ancient sources is this: the sun, being the luminary of the day, needs no nocturnal house, while the moon, being the illuminator of the night, needs no house for the night. It is evident, even to the most naïve, that this reason presupposes a sun crossing the sky by day and sleeping "in" a particular constellation during the night, and a moon serving as night watchman and resting by day in one of his "stations" or "dwelling places" (*menazil*)—as if the moon could not most of the time be seen with the naked eye wandering over the sky in bright daylight, and as if the sun had not to continue its apparent journey below the horizon from the place where it sets to the point where it rises!

The same silly argument which is used for explaining why the moon has no diurnal house could, of course, have been applied to any one of the minor planets supposed to inhabit one house by day, one by night—as if they could be imagined to rush suddenly in the evening from the day house to the night house and in the morning to the day house to rest and to recuperate in each one from these short, spasmodic exertions. But why should any one expect any logic from an astrologer? As soon as the absurd conception of one house for the day, one for the night, is accepted, it seems "natural," and "consistent" that the minor planets should have their nocturnal mansions on the side where the moon rests from her labours—in *Cancer* (above, p 140)—and their day houses on the side where the sun lives gloriously in the *Lion*.

Mercury in *Virgo* is an inheritance from the Babylonians, his

day station in *Gemini* seems quite suitable, considering that the Twins are sometimes—*e g*, by Martianus Capella—explained as “Apollo and Mercury” Venus in *Libra* is evidently the goddess seeing Adonis rise from the Underworld and sink down again to Hades at this equinoctial constellation (above, p 100 f, pl xm) Venus resting by night in *Taurus* will immediately remind the reader of the sky god Zeus assuming the shape of a bull for his love affair with the mythical eponym of this unfortunate continent Europa—*i e*, ‘*erubha*’ the “evening star” Mars *Ares* in *Scorpio* is justified by the red star *Antares*—*i e*, “Vice Mars”—in the heart of this venomous astral animal Mars in *Aries* is appropriate because the Ram is said to be a fighting, aggressive animal (presumably Greek and Egyptian wild sheep were more savage beasts than our own meek ovines) Why Jupiter should dwell in the Archer and the Fishes is not so easy to understand Ptolemy says, in deep earnest, that Zeus loves “windy and fertile signs,” fishes being fertile (but are not crabs just as fertile?) and *Sagittarius* “windy” (because of the late autumn storms) Nothing is left for Saturn, the “dry” planet, but *Aquarius*—presumably to assuage the thirst caused by his “dryness—and the Sea Goat, the sign of the winter solstice

It would be difficult to invent anything more inept than this whole system which was accepted wherever Ptolemy was read, studied and religiously believed But the nonsense does not end there If the planets have two mansions they “must” needs “prefer” the one or the other Hence we are given a list of their “preferences” (*haretai topoi*), the houses in which they “rejoice” Saturn in *Aquarius* pouring out the blessed drink for the dry old digger, Jupiter in the Archer—presumably he dislikes fishes and “prefers” game Mars, as you would expect, rejoices in the poisonous Scorpion Venus loves, of course, the potent Bull more than the inanimate Balance, Mercury prefers the Virgin to the two male Twins—a preference which must have seemed right and decent even to ancient Greeks

Sometimes planets are said to “rejoice” in their “exaltations”—*e g*, Venus in *Pisces* (the Syrian goddess with her sacred fishes, the fried fishes still eaten on “Fry day” *i e*, “Frey’s day” evenings by the Jews, who once baked poppy strewn plaited cakes for the “Queen of Heaven,” and still eat fish without knowing it, on Venus’ day) According to the Egyptian priest and poet Manetho, Saturn “rejoices” in *Capricornus*, *Aquarius*, *Leo*, *Libra* and *Aries* And why, indeed, should we grudge the sad old thing these few innocent joys in his slow and melancholy

wanderings through the cold depths of the universe, even if we do not see any reason for these rather irrational and groundless merriments?

If the theory of the domiciles is pure mythology based on a fantastic creation myth, the theory of the "exaltations" is based on a psychological interpretation of perfectly neutral astronomical terms by the naïve anthropomorphic theology of the star-worshipper

"Altitude" (Greek *hupsos*, *hupsēlotēs*, *hupsōma*) means for the Greek astronomer the northern declination of the planets—a deviation to the North from the equator for the sun, a deviation from the ecliptic for the other planets (fig 33)



Fig 33

The Southern declination is called the "lowering" (*tapeinōma*), simply because the Northern pole of the sky is above, the Southern pole below the horizon (the terms would, of course, have been used in the opposite sense if our astronomy had been invented by Australians or Patagonians) After the ancient astronomers had introduced their hypothetical "eccentric orbits" and epicycles (below, p 244) for the purpose of explaining the apparently irregular movements of the planets, they also called *hupsos*, "height," and *tapeinōma*, "lowering," the *apogee* and the *perigee*, the points where the star is farthest from and nearest to the earth—simply because the earth is "below" the stars and the stars are "above" the earth

So a star can be "exalted" and "depressed" either by a—merely apparent!—shift to the North or to the South, or by alternately running away from and approaching the earth

There is absolutely nothing to be said against the use of these traditional terms by astronomers, using them according to this definition But what are we to reply when we are seriously asked to believe that a star is "exalted"—i.e., "raised to its highest power"—by moving away from the earth, when anybody approaching a fire or a candle can feel that the intensity of radiation diminishes with the distance, even if the ancients did not know that it diminishes with the square of the distance?

What sense is there, finally, in telling a man that a planet is "depressed" in the sense of "saddened," "weakened," while in a position South of the ecliptic simply because the term "depression" (*tapeinōma*) has been quite arbitrarily and naively introduced for the purpose of giving a name to this purely apparent movement in relation to a purely imaginary line? Even if a planet is a "divine," "angelic" or "spiritual" being—whatever these terms may mean—why, in the name of Hermes Trismegistus, Nechepso and Petosiris, should such a blissful immortal be sadder in the South and gladder in the North instead of rejoicing like a British *Milord* going South to a sunnier climate and getting more and more splenetic again when he returns to the fogs of the North? Really, if such things were indeed revealed by the gods, they must have been poor gods who revealed them.

As a matter of sober fact they have not anything to do with whatever gods there be, but are late systematisations of extremely primitive Oriental speculation. The Babylonians who noticed at a very early time that every planet is invisible for part of the year imagined that it was during this period, hiding in some "secret place" (*nisirtu* above p. 190), and tried to guess where those hypothetical "hiding" or "dwelling places" might be. Because *nisirtu* is also a place from which you watch, a "look out" or watch tower, and since the term "house" (*betu parakku*) was rendered *purgos*, "watch tower," the planet in, or rather upon his supposed watch tower was believed to have reached its "highest" position (*hupsoma*). These mythological ideas surviving in medieval illustrations were finally mixed up and confused with purely astrological terms referring to the northern crests of the apparently undulating planetary orbits (fig. 33). The resulting muddled imaginations were handed down reverently from generation to generation as a precious inheritance of "occult" wisdom.

XXIV

A SUBJECTIVE EFFECT OF TIME SPACE
PERSPECTIVE

How fundamentally absurd the whole idea of the planets "in" their "houses," "exaltations" and "preferences" is, will be easily seen by the reader who remembers that all the apparent local contacts or "conjunctions" between a planet and a fixed star are, for the modern astronomer, merely effects of a purely subjective time space perspective. The occultation of a fixed star by a planet means no more to him than the fact that by stretching out his hand towards it he can obscure a whole constellation, as Pericles demonstrated to an Athenian soldier frightened by a solar eclipse by holding his cloak before the man's eyes.

We know, moreover, since the astronomer Roemer first noticed it in 1667 in the course of his observations of the satellites of the planet Jupiter, that distant stars are not now in fact where the observer sees them, because—as the Greek philosopher Empedocles of Acragas (now Girgenti in Sicily) first explained about 450 B.C.—light takes time to travel. It takes, for instance, fifty-seven years to reach the earth from Aldebaran, the most brilliant star in the constellation of the Bull (*Taurus*), thirty-two years from *Pollux*, the most luminous star in the Twins (*Gemini*), fifty-six years from *Regulus*, the king star in *Leo*, 230 years from *Spica*, the "Corn Ear" star in *Virgo*, 380 years from *Antarès*, the red man star of *Scorpio*.

Whenever the astrologer sees the light of *Antarès* "in the Ascendant" (above, p. 36, below, p. 218)—*i.e.*, just skimming over the eastern horizon—this star, supposed to determine not only the fate of Mussolini (above, p. 26, pl. II), but also that of Goethe by his rise, has not been in the position entered on the star clerk's diagram (pl. II) for the last 380 years—*i.e.*, ever since the time when Queen Elizabeth quarrelled with Mary Queen of Scots!

If Mars is said by the star diviner to "rejoice" because it "strands" near *Antarès* in *Scorpio*, this is tantamount to asserting that the god is "delighted" because 380 years ago a line connecting the eye of the terrestrial observer with the centre of *Antarès* ran through the otherwise undistinguished point in time-

space where the planet of Mars is "standing" now! Does not this mean attributing to that bellicose and malignant divinity a rather pedantic antiquarian interest in problems of abstract time space geometry?

At the moment when we see Venus "standing" next to *Aldebaran*—*i.e.*, in her "house" *Taurus*—Venus has actually stood in our line of vision about six minutes before the rays of sunlight reflected from the clouds covering her surface have reached our eye. As to the "Eye of the Bull," *Aldebaran*, it "stood" where we now see it (1946) in the year of the Lord 1889.

The same astrologer who will gravely explain the considerable differences in the fate of twins by telling us that every minute—nay, every second—makes the greatest difference in a nativity, will, with the most perfect equanimity, neglect both the six minutes difference between the real and the apparent position of Venus and the roughly fifty seven years which it takes the light of *Aldebaran* to reach our eyes. Now, since it takes about two minutes for the disc of the sun or the moon to cross the meridian, the reader can easily realise, by looking at the sky, or even at a celestial map, the arc of one and a half degrees which Venus would seem to traverse in these six minutes. As to the "real" position of *Aldebaran* fifty seven years ago, we could calculate it for a given hour—let alone for a given minute or second—only if we knew the distance of this beautiful star, not in light years, but in light minutes and seconds—a condition quite impossible to realise with the methods at our disposal.

Even from the nearest of all known fixed stars, *Proxima Centauri*, light takes 36,000 hours—*i.e.*, about 1500 days, or about four years—to reach us, a fact which is never taken into consideration by any ancient astrologer, when he imagines *e.g.* *Sol* "riding on" or "standing in" *Leo* (fig. 25), the main star of which (*Regulus*) is (above, p. 205) fifty six light years away from the earth, which is itself on an average eight light minutes distant from the sun.

As for the modern star clerk, he gets over the difficulty by pretending that the fatal influence on the new-born child or just conceived embryonic life is not exerted by the real constellation or star in question—say *Scorpio* or *Antarès* in *Scorpio*—approaching or being approached by a planet—*e.g.*, Mars—but by Mars standing in the abstract "zodiacal sign ♏ " (*Scorpio*), which is in the present age shifted, owing to the precession of the equinoxes (above, p. 90), into the part of the

Zodiac occupied by the wholly innocuous stars of *Libra*. This abstract, empty "sign" ♎, being by definition a purely geometric sector of a Great Circle of the (apparent) celestial sphere, and having—in astrological theory (above, p. 113)—nothing to do with the stars in it, radiates obviously no light upon the object of its alleged fatal influence. So the factor of the velocity of light would not enter into the argument and the horoscopic diagram need not be condemned *a priori* as being out of date by anything from thirty two to 380 years.

But even if this evasive specious pleading were accepted as a valid argument, it would still be true that the light of the sun takes about seventy six minutes twenty seconds—roughly an hour and a quarter—to reach Saturn, roughly forty six minutes twenty four seconds to reach Jupiter, about twelve minutes to reach Mars, about six minutes to reach Venus, a little under three minutes to reach Mercury and eight minutes to reach the earth. This means that when Saturn is in its *apogee*—farthest away from the earth on the other side of the sun—it takes some thing under an hour and a half for Saturn's light to reach the surface of the earth. When the planet is in the *perigee*—nearest to the earth—its light is still for more than an hour under way until it reaches the eye of the observer. Since the earth completes in an hour one twenty fourth of its rotation, the difference between the apparent and the "real" (relative) position of Saturn is always greater than half a "sign." Saturn observed as "standing," "rejoicing" or "grieving" in a certain sign may therefore very well be already in the neighbouring very different one. Still, no modern astrologer ever makes any correction for the velocity of light, although they all affect a most progressive, up to-date attitude by introducing the recently discovered planets Uranus and Neptune into their absurd pseudo-calculations.

Pro tanto, to this amount every horoscope ever calculated is, and was, inexact, the resulting error being of an order of magnitude similar to that introduced by neglecting the precession of the equinoxes (above, p. 112 f.)

To be quite fair, we must not, of course, omit to point out to the astrologer a way out of the corner into which he have driven him. Plotinus and his neo-Platonist successors—possibly influenced by the Jew Philo of Alexandria and his interpretation of Gen. 1. 14 concerning the stars created as "signs" (*semeia*)—taught that the movements of the stars indicate (*semainei*) the future, but do not make it (*ou poiei*)

This theory, which cuts the grass from under the feet of Ptolemy the astrological physicist (above, p 115) trying to achieve a rational explanation of the astrological mythology of his predecessors, enables the modern astrologer to justify all his operations with wholly subjective, imaginary "constellations," (above, p 54), imaginary circles (above, p 28), "houses" (p 189), "places" (p 36) and whatever other reference systems of positional astronomy he chooses to use. For if God the Creator has intentionally so arranged the clockwork of the universe that the change in the relative positions of the stars should always indicate the future to the expert astrologer, then it obviously does not matter in the least that there are no scorpions, bulls, rams, etc., in the sky, that the zodiacal circle is merely a geometrical construct and that the fixed stars have not for many years been any longer where we see them. All that matters for this mythological theory—which considers the stars as the letters and ideograms composing the mysterious writing embroidered into the living starry robe of the divinity—is only how these symbolic configurations look to the observer.

In this way the astrologer can make, and did make, his peace with all the great religions of the world with Brahmanism, Buddhism, Shintoism, Confucianism, Judaism, Christianity—where it found an eloquent defender in Origen—and finally with Islam. If the stars are angels—doing the will of God, whether they announce good or evil—executing a complicated celestial ballet—to the accompaniment of the music of the spheres made audible to us since 1915 by the genius of Gustaf Theodore Holst—for the purpose of signalling by their involved evolutions the will of God to those who want to know it merely for the purpose of submitting humbly to the decrees of predestination, then all the objections which the scientist can raise, and must raise, against the methods of astrology become irrelevant. The astrologer can profess his belief as part of his or her religion and take his or her stand—as Tertullian and St Augustine did in another context—on the principle of blind irrational faith *prorsus credibile est quia ineptum est. Certum est quia impossibile* ("It is altogether credible because it is silly. It is certain because it is impossible"). Or, as this passage is often abbreviated "*Credo quia absurdum*" ("I believe it, because it is absurd").

XXV

THE PLANETARY PATRONS OF THE HOURS,
THE DAYS AND THE DECADES

HAVING divided up the "twelve signs of the zodiac" between the seven planets, the next thing for a systematic Greek mind to do was to distribute the planets all over the circle of the "thrice twelve constellations" of the Babylonians (above, p 83, fig 16), the, "decans" of the Egyptian star calendar (above, p 82 pls vi, vii)

The Babylonians had a perfectly rational system of co-ordinating certain fixed stars with the planets by comparing—as Boll and Bezold have shown—the colours of the respective stars (reddish, yellowish, greenish, whitish, bluish) with those of the planets in question. The Greek astrologers were not interested in these observational niceties, and identified, quite mechanically, first each "decan" with one of the 10 degree thirds of their ecliptical "signs" (pl ix). Having done this, they simply placed one planet after the other on top of the decans (pl ix), calling the planetary god in question the "face" (*prosōpon*, *facies*) or "mask" of the decan. In these sections of the "signs" the planets are said to "rejoice," as if they stood in their own "houses."

It is hardly necessary to say that this correlation is astronomically quite meaningless and has no observational basis what soever. That, however, did not prevent the astrologer from harping on this further complication of his divining methods. The following lines—taken from a Greek manuscript in the Vienna Imperial Library—are an example of the procedure adopted.

' Suppose the Sun god stands in the tenth degree of *Aries*—i.e., in the first Decan owned by Mars. Now we have already said that the sun indicates the characteristics of the soul. Therefore you find here the soul of a virile, choleric and warlike man, fond of weapons, etc. If the Sun God stands in the twentieth degree of *Aries*—i.e., in its second decan, which has the face (or mask) of the sun—that means a man resplendent in the disposition of his soul, he is avid of glory, ambitious, but not fond of war. If the sun stands in the thirtieth degree—i.e., in the third decan of *Aries*, the face of Venus—that means a man with an effeminate soul, a feminine figure, who is vicious and prurient."

If the reader is curious to know whence this wisdom is derived, he will be told by the Neo-Platonist Porphyry that Teukros of Babylon got it from "the ancient sages"—*i.e.*, Petosiris and Nechepso

But it is easy to see that the whole system cannot be very old, for the sequence of the planets presupposed in our diagrams (pl. ix) is neither the old Assyrian (above, p. 195), nor the Neo-Babylonian (above, p. 197), nor any of the old Egyptian series (above, p. 195), nor the one of Plato's *Republic* (above, p. 198), nor the "Egyptian" one of Plato's *Timæus* known to Eudoxus, Chrysippus etc., nor even the further refinement, attributed to Philolaus and the later "Pythagoreans," possibly by Heraclides Ponticus (above, p. 199)

It is a wholly new system, known as the *Heptazōnos* or *Septizonium*—a Latin literal translation of the Sumerian *ub imin*, "seven regions" (above, p. 199), the *Heptamuchos* of Pherecydes of Syros—which places the sun in the middle between the "exterior" or superior planets Saturn, Jupiter, Mars, and the "interior" or "inferior" planets Venus, Mercury, Moon. This is the arrangement of the seven concentric planetary spheres placing the planet with the shortest period of revolution—the moon with $29\frac{1}{2}$ days—in the innermost, the planet with the longest period, Saturn with its $29\frac{1}{2}$ years, in the outermost spheric shell of the universe, immediately below the eighth sphere of the fixed stars. This arrangement, placing the sun, revolving in twelve months, between Mars, revolving in twenty-three lunar months, and Venus, running through her orbit in about eight, is totally different from all the previous systems placing sun and moon side by side and the five "minor" planets together in one order or another, be it above or below the "two great luminaries." This order corresponds to the glorification of the sun as, the "centre," "heart," or "chorus leader of the universe" (above, pp. 175 ff.) I have no doubt that it was introduced either in connection with Aristarchus of Samos' (310-230 B.C.) and Seleucus of Seleucia's momentous discovery of the heliocentric system, rediscovered and finally established by Copernicus, or—more probably—by the great geometer Apollonius of Pergē (born about 260 B.C.), who taught that the sun revolves around the earth but the planets as satellites around the sun—a system revived by Tycho Brahe in the interest of astrological divination (below, p. 230). Hipparchus, Archimedes, Posidonius of Apamea and Ptolemy accepted it. It is first found in a fragment of the Stoic Diogenēs of Babylon

(second century B C) The fact that it is called "Chaldean" by Macrobius may mean no more than that it was taught by this Hellenised Mesopotamian. No trace of this system has ever been found on cuneiform tablets which preserve down to 7 B C the series reproduced in Chapter XXIII above p 195

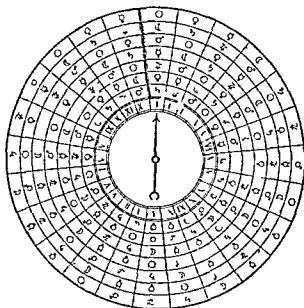


Fig 34a

The great historical interest of the *Septizonium* order derives from the fact that it became the basis of our planetary week. The basis of this curious calendar device is the assignment of every hour of the day to one of the planets—a procedure quite analogous to the connection of each one of the thirty six decans with one of the planets. The star clerks who accomplished this marvellous achievement (above, p 209) could, of course, not omit to correlate equally the hour stars of the Egyptian star clock (above, p 81) with the seven planets.

The procedure was very simple and yet led to a result which must have delighted the heart of every true Pythagorean arithmologist. Since the Egyptian day began at sunrise, it was natural to assign the first hour of the first day of the month to the sun, the second, third, etc., to the second, third, etc., planet in the *heptazonos* or "septizonium" order (above, p 210), as shown in our fig 34a. Because the number, 24, of the hours of day plus night is not divisible by 7 ($7 \times 3 = 21 + 3$

= 24), the first hour of the next day must be dedicated to the fourth planet in the *septizonium* order. Therefore the seven days of the week—equivalent to a quarter or one phase of the lunar month—will be placed under the patronage of the planets in the familiar order of our week-days—still used all over the world. Sun-day, Mon day (=Moon day), Tues day (*Ziu's* day, French *Mar-di*, Italian *Marte-di*), Wednes-day (*i e*, Wodan's day, French *Mercredi*, Italian *Mercole di*, Mercury's day), Thurs-day (*i e*, *Thor's* day, Italian *Giove-di*, French *Jeu-di*, from Latin *Jovis dies*, Jupiter's day), Fry-day (*Freya's* day, Italian *Vener-di*, French *Vendre-di*, from Latin *Veneris dies*, Venus' day) and finally Saturday (*i e*, Saturn-day). As our diagram shows, this system is in admirable harmony with the correlation of planets and decans

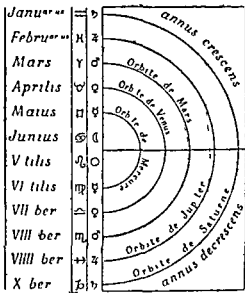


Fig 34b

The reader will notice in the middle column on the right hand side of this diagram the planets in the (descending) order

- | | | | | | | |
|-----|------|------|---------|---------|-------|--------|
| ○ | ♌ | ♊ | ♈ | ♎ | ♋ | ♏ |
| Sun | Moon | Mars | Mercury | Jupiter | Venus | Saturn |

and so forth. The series begins and ends with Mars, because the vernal equinox falls in the month of March—*i e*, of Mars in the Roman calendar (fig 34b), which seems to have been adapted

to the system of planetary domiciles in the period following upon the passing of the *Lex Acilia de intercalatione* (191 B.C.), on the basis of the Pythagorean books supposed to have been found in the tomb of King Numa in the year 181 B.C., so as to make the month of Mars coincide with the "house" of this planet, April with that of *Aphroditē* (Venus), May (*Maius*) with that of Mercury (*Hermes*, son of *Maia*), June with that of the moon—i.e., of the goddess *Juno Luna Regina*, who "*confert flores menstruos*" on women; according to St. Augustine, December, the month of the *Saturnalia* feast, coincides with the house of Saturn (July, the house of the sun, was afterwards duly given to the glorious memory of *Julius Cæsar*, the house of wise *Hermēs* to the genius of Augustus.)

Dio Cassius has preserved still another, typically Pythagorean explanation of our week days. Our diagram p. 200 shows the arrangement of the seven planets placed at the seven points of the heptagram in the order of the two "trines" in the hexagram illustrating the cuneiform planets- and conjunctions-list of the time of Cambyses, with the sun placed on top and amidst the "near" planets Venus, Mercury, Moon (on the right), and the "outer" planets Mars, Jupiter, Saturn on the left (above, pp. 196 ff.).

If we follow the lines of the heptagram p. 200, beginning from the Sun at the bottom, right side, rising to the Moon at the top, and so forth, we get the familiar sequence of the planetary names for the days of the week, still used as a basis for daily forecasts in calendars and newspaper astrology.

This jumping from the first in the series to the fourth, and so forth, is connected by Dio Cassius' Pythagorean source with the musical interval called *epitritos* or *dia tessarōn* by the Greeks, the "fourth" by ourselves, the idea being that the movement of each planet through the air (or through the ether) creates a musical sound, and that these sounds, separated from each other by the harmonious interval of the fourth yield together the famous "harmony of the spheres," evoked by Milton in his hymn to the Nativity illustrated by our fig. 1:

"Ring out ye Crystall spheres,
Once bless our humane ears,
And let your silver chime
Move in melodious time;
And let the Base of Heav'ns deep organ blow,
And with your ninefold harmony
Make up full consort to th' Angelike symphony."

XXVI

THE PLANETARY ASPECTS

THE mysterious Babylonian figure of the heptagram (pl xvi a) was particularly dear to the astrologers because it reminded them of the equally Babylonian diagrams illustrating the theory of the so-called "aspects" (*schemata, schematismoi*, Babylonian *usurati* "designs")

Such diagrammatic illustrations have been found on a cuneiform tablet in connection with the theory of "astrochography"—i.e., a system correlating the various constellations with the four great powers competing for the supremacy in the Oriental world known to the Mesopotamian star clerks (pl xvi b)

The Babylonian astrologer divided the months of the year during which an eclipse of the moon might occur into groups of three assigned to the four great powers. March, July, and September eclipses were believed to refer to Akkad, April, August and December occultations to Elam, those in May, September and January to Amurru, those in June, October, February to Subartu or Gutium. Similarly, of the Babylonian lists of "Thrice Twelve Stars" (above, p 83, fig 16), one series is supposed to refer to Babylonia, one to Amurru, the enemy Westland, one to Elam, the enemy East country, one to Gutium-Subartu, the hostile Northern region, which the Assyrian star-redes identified with their own country. The original basis of this system is the fact that the stars in question rise and set in the various points of the astral compass card (above, p 85 f) the directions of which point to the various countries surrounding Mesopotamia.

A cuneiform tablet in the Royal Museum at Brussels shows a diagram representing the circle of the twelve months and of the respective zodiacal signs attributed in triangular groups of three (*trigona*) according to the list reproduced above to the four great powers (pl xvi b).

This diagram is the oldest known example of this type of geometrical, wholly arbitrary divisions of the ecliptical circle into corresponding groups of twelfth parts (*dōdecamoria*), which played such a great role in Greek astrological speculation.

The trines used on the Brussels cuneiform tablet for correlating the zodiacal signs attributed to the "four quarters" (*kibrat*

arbiti) of the earth are used by the Greek star diviners (fig 28) for the purpose of correlating the twelve sectors of the ecliptic with the four elements of Empedocles and the four "elementary qualities" of Aristotle (above, p 116), all this on the basis of pre-scientific, so-called commonsense concepts which still play an important part in the puerile, semi savage physics of our modern occultists

According to the animistic, anthropomorphic cosmology of Empedocles—projecting our purely human or animal valuations into the universe and its most remote silent depths—the world is ruled by Love and Strife So the astrologer tries to discover, curiously enough by means of geometry, the "sympathies" and "antipathies" pervading the sky and dividing the zodiacal belt into rival bands of allies and adversaries

"Utque sibi coelum, sic tellus dissidet ipsa"

("As the sky's a house divided, so's the earth against itself")

says Manilius,—the truth being that human folly believes the stars to war against each other as the barbarian inhabitants of this planet still do to this day When they combine in "conjunctions" it is—like men or nations in league with one another

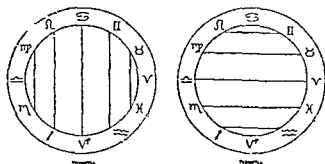


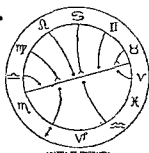
Fig 35

—always a combination against a common enemy The *theoria videntium se et audientium stellarum* ("theory of stars seeing and hearing each other," fig 35) which Firmicus Maternus transcribes "from the books of Abraham" (1) supposed to have brought this sorry wisdom from Ur of the Chaldeans, can beat any other astrological dogma for sheer absurdity

The Babylonians did say of stars in opposition or conjunction that they "speak to each other"—just as the days and nights are said in the most beautiful of the Hebrew psalms (xix 2)

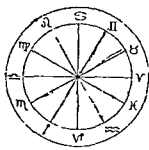
composed by King David for the day of the ceremonial erection of the tent sanctuary of the desert on the "threshing floor of Aruna" on the top of Mount Zion—to hand over a verbal message to each other. It was a bad sign when the full moon went down without "waiting" for the sun, evidently for the purpose of a little friendly conversation. If they "speak" to each other, they must be supposed to hear one another, and, therefore, we actually find the Greeks dividing the signs into such as hear each other (*akouonta*) and such as see each other (*bléonta*). Since they are not all of equal power (*isodynamonta*), some are "obeying" (*hypakouonta*), some are "commanding" (*prostassonta*). Some "throw shadows on each other" (*antiskia*) or "overshadow each other," if you please, and we find the astrologer Dorotheos of Sidon making a great to-do of this absurd celestial shadow play.

Some signs "love," some "hate" each other (fig 36). The Crab, being an aquatic animal, is "beloved" by *Aquarius*. So far, so good. But why does Manilius want his readers to believe that the Lion most perversely loves that monstrously ugly creature (fig 27) the Sea goat? Why are the Twins so full of



AS APPLIES TO DOROTHEOS

Fig 36



IN SYRIA

Fig 37

hatred against that poor Ram? Why is the Ram in love with the Bull? Why does the Bull "plot fraud" (*fraudem nectit*) against the Ram? Why on earth or rather in heaven does the Ram wage war against the gentle Virgin with her baby son?

If stars can "see" each other, it follows that they may look askance at each other, and that at different angles. Whence the elaborate theory of the "views" (*ópsis, adspectus*) that they can take of each other. Those that are "in opposition" look each other in the face, they are "diametrically opposed" (fig 37). According to the Babylonians this is a friendly relation, they

face each other because they "speak" or "converse together." Some of the Greeks concurred, others explained the "opposition" as the conflict of antagonistic opponents. Manilius observes "incompatibilities" between the "burning Crab" and the "glacial Capricorn." How could they be at peace? Also the one sets when the other rises—an argument which had or at least should have become obsolete since Heraclides Ponticus had discovered that the earth rotates around its own axis, and that therefore the daily movement of the so-called fixed stars is merely apparent.

Also no adverse conclusion is drawn from the fact that *Libra* sets when *Aries* rises. They like each other, being both "equitable" signs marking the equilibrium of day and night. But if the Ram is "equitable" why does he attack the Virgin?

Of course, the "Virgin" just loves the "Fishes" (above, p. 107).

Anyhow, as we should expect, as men of the world,

Crebrius adversis odium est

("More often those facing each other hate one another")

At least, this is what the poet Manilius says, having learnt his lesson thoroughly at the imperial Court of Rome.

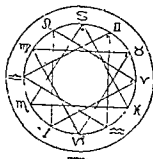


Fig 38

Contrariwise, all astrological experts are agreed in considering the "trigonal aspect" as benevolent. The only, very funny reason given by Ptolemy for the theory that the signs connected by trines (fig. 38) and hexagons (fig. 40) "love each other" is the alleged fact that they are always "of the same sex." So we are to suppose that even the stars in heaven are homosexual, not to mention the fact that poor Taurus is—because of its mythical emasculation (above, pp. 91 f.)—counted as a female. The

same applies to the Sea goat, because the Babylonian ideogram for this constellation shows a fish within a fish (above, p 104)

The quadrant (fig 39) is generally considered an unfavourable aspect, although the correlation of the four "cardinal points" was believed to be a most happy "consideration" giving additional vigour to stars looking at each other "squarely" under this angle



Fig 39

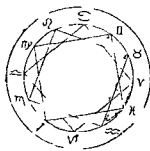


Fig 40

The "sextile" aspect (fig 39) has much the same character as the trine, only in a lesser degree. The hexagon was considered the most "natural" configuration, because "even the bees build their cells on a hexagonal pattern." In reality they build approximately round cells fitting their own bodies and the pressure exerted by these cylinders on each other reduces the soft walls to the shape of hexagonal prisms. No geometrical wisdom of the bees contributes to the result. If all the "aspects" are superposed as in our diagram fig 41, we get a most beautiful crystal like figure, which proves—at least to the satisfaction of hellenised Oriental mystics like Porphyry of Tyre—that "each star radiates seven rays, three upwards, three downwards, one diametrically, those on the right side upwards, those on the left downwards." The last part of the description evidently applies to a star only when it is in the Ascendant.

It is hardly necessary to say that the whole theory of these "seven rays," and, consequently, the whole system of the aspects, the pride and most admired creation of "scientific" astrology, the principal basis of all its calculations, is wholly and entirely derived from the purely geometrical diagrams figs 38 43 and has not the slightest basis in factual observation. Most characteristically the Egyptian sign for "star"—also meaning "teaching," evidently because star and calendar lore was con-

sidered the most important subject of instruction—is a five ray star, ✱, presumably because the hand has five fingers, and because the rays—at least, those radiating from the sun disk—were compared by the Egyptians to hands as we can see on an often reproduced Egyptian basrelief showing King Amenophis IV and his family basking in the rays of the divine sun disk

On the other hand, the Sumerian and Babylonian pictograph

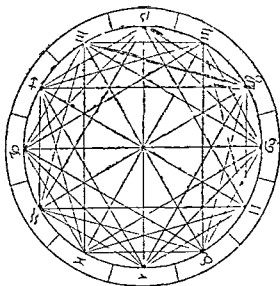


Fig 41

for "god" and "sky"—the plural of which means "constellation," "star"—is a star of eight rays, presumably because the sky was in the third millennium B C divided into eight sectors (above, pp 40 f, fig 5) The Babylonian star dial fig 16 shows six rayed stars. Actually, this is the correct representation, because of the histological structure of the crystal lens of our eyes—a tissue composed of three interwoven strands—which projects an imperfect picture of a six-point star shape of every brilliant luminous point on a dark background upon our retina. The ancient spectator was as well aware as we are of this wholly subjective irradiating scintillation, but the Egyptian convention of the ✱ star (pl VII) shows clearly that he was unable to count the precise number of projecting points of this star image, some artists drawing five, some six, some seven and some eight—"rayed" stars

In reality, radiation is, of course, emitted at a uniform rate in

all directions, and ancient Greek optical theory was as well aware of this fact as the modern physicist. Every star "faces" every other at all times—unless there happens to be another celestial body in the line connecting a pair of them—and it is undiluted nonsense to imagine that stars can "look at each other" at various angles. There is always one point on the surface of each star exactly opposite a certain point on the surface of the other, from which an observer would see the other star exactly overhead. Only the primitive idea supposing all the stars of a certain constellation—say the Lion—to be situated on one and the same solid crystall sphere, the centre of which is the standpoint of the observer on the surface of the earth (pl. III), is responsible for the naive and fantastic supposition underlying the theory of the "aspects." Besides, even if we were to credit each star with a "soul" of its own—as the great German scientist and pantheist philosopher Gustav Theodor Fechner still did in the middle of the nineteenth century—it would be unbelievably childish to attribute to such hypothetical cosmic intelligences of a higher order the petty irritability of their most uneducated human observers, and to suppose that they are not only either friendly or hostile to the far away microbic human parasites crawling over the surface of this one small satellite of the sun in pursuit of their own infinitesimally unimportant ephemeral avocations, but even lovingly or hatefully disposed towards each other.

In spite of the manifest and easily demonstrable absurdity of the whole theory of "aspects," it was extended from its original domain of the zodiacal signs to the planets straying in an apparently "capricious" way (below, pp. 231 f.) through the zodiacal belt.

The starting point for this further development of methodical madness was a curious procedure of attributing a particular orientation to the four trines seen in our fig. 28, p. 116. It is stated by the astronomer Geminus—presumably on the basis of the alleged millennial experience of the "Chaldeans"—that whenever the moon is in the first trine *Aries, Leo, Sagittarius* (♈ ♌ ♐), the prevalent wind blows from the North for a number of days. The wind blows from the South when the moon is in the trine *Taurus, Virgo, Capricornus* (♉ ♍ ♑). The wind comes from the West when the moon stands in the trigone *Gemini, Libra, Aquarius* (♊ ♎ ♒), and from the East when it stands in Cancer, Scorpio, Pisces (♋ ♏ ♐) (Fig. 43).

Ancient meteorologists—ignoring the vast distances by which

the outermost surface of the atmosphere is separated from the orbit of the moon—could still think that the direction of the wind is influenced, like the tides of the sea (above, p 138), by the movements of the moon. This preposterous theory was obviously evolved in a region of the earth where “trade winds”—north east and south west monsoons, well known to Aristotle and Pliny—blow with a certain regularity for considerable calendar periods—entirely owing to differences of temperature between land and sea caused by the seasonal variations in the intensity of insolation—and where the moon was worshipped as the supreme divinity. From this it was only one step to the belief that the minor planets, too, had an influence on the direction of the prevailing winds.

For some unfathomable reason or unreason, the Egyptians had established a connection of sorts between the minor planets and the four cardinal points of their horizon, calling Jupiter “the star of the South,” Saturn “the star of the West” and also “the star of the East,” Mars “the star of the East” and also “the star of the West,” Venus “the star of the West” and also “the star of the East.” Since no planet is allowed to the North, I believe personally that these terms are not meant as permanent epithets, but refer to Jupiter standing in the South—i.e., crossing mid-heaven—when the Babylonians call it *Nibiru* (= “transient”), Venus, Mars, Saturn standing in the East or in the West before sun rise or after sun set.

But the Greek star clerks seem to have read into these texts some mysterious connection between the planets and the main winds. Anyhow, we find them proffering a lot of absurd reasons why Jupiter and the Sun, the two “male” planets, are connected with the “fertile” North wind supposed to produce male offspring and even to fertilise barren mares, while the female ones—the Moon and Venus—belong to the South wind, believed, foolishly enough, to produce female children. Obviously, our’s not to reason why, but just to believe *quia absurdum est* or be that Jupiter is the patron of the North, Venus of the South, Saturn of the East, Mars of the West.

Mercury is in the centre because he is supposed to be “androgynous”—a statement we must not criticise, but just “take it or leave it.” The term was applied originally to Venus, supposed to be male as evening star, female as morning star, or the reverse.

Fig 42 shows the planetary trines as they are described and oriented by Ptolemy. If any reader is inclined to be impressed

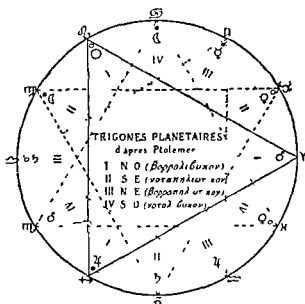


Fig 42

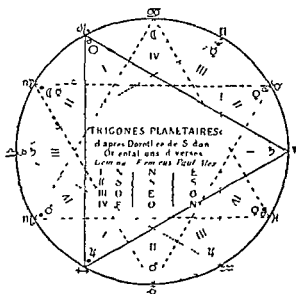


Fig 43

by the specious reasons given for this particular orientation, let him compare fig 43, which places side by side the conflicting orientations given by Geminus, Firmicus and Paulus of Alexandria

If this great mystery was revealed at the beginning of time by the thrice great god of wisdom, he must have failed to make himself clear enough to his various less wise disciples

XXVII

PLANETARY TRINES AND ASTROLOGICAL GEOGRAPHY FOR "MUNDANE FORECASTS"

WE should not quote all the arbitrary and nonsensical combinations discussed at such length in the preceding chapter were it not that they have been used as the basis for the whole elaborate system of "mundane," "universal" or "*catholic*," i.e., political prognostication, originally based on the lists of zodiacal signs (above, p 116) or of the "Thrice three monthly stars" (fig 16), but gradually systematised so as to take the position of all the planets into due "consideration" One of the systems divided the "inhabited earth" (*oikoumenē*) into seven, another into five zones or "climates," placing them one after the other under the patronage of one of the seven planets or of the five minor ones According to Achilles Tatius, Saturn dominates the arctic, Jupiter the temperate, Mars the torrid zone, Venus the southern temperate and Mercury the southern polar region This was not a very useful distribution, considering that very few clients were interested in the future of the north and south polar regions, or even the torrid zone of Assuan or the southern temperate zone I mention it only for the sake of potential South African or Australian readers, who might like to know that their patron is the lovable goddess Venus, and that they can rely on her favours on the appropriate occasions So a system was set out, of which we have only a fragment placing Egypt under Mercury, because of her famous Hermes Trismegistus, Libya, with its indomitable Berber tribes, under Mars, Palestine under the Moon worshipped by the Bedouin Arabs, the Orient in general under Jupiter (the Marduk of the Babylonians), Cyprus, of course, under Venus (*Cypus*), Persia under the Sun

Ptolemy begins by dividing the inhabited world into four

quarters as the Babylonians had done (above, p 214), but divided precisely by a meridian running through the Arabic Gulf and the Sea of Azov (*Palus Maiotis*), and by the parallel drawn through the columns of Hercules (the rock of Gibraltar and the summit of the Monkeys' Mountain above Ceuta) and the Gulf of Issus (Adana)

Each one of these quadrants is patronised by one of the planetary trines, explained above, p 220, fig 43. The North-Western triangle ($\Upsilon \text{ } \Omega \text{ } \dagger$) dominates the Celto-Galatian regions of Europe, the South-Eastern ($\delta \text{ } \text{♁} \text{ } \text{♄}$) Ethiopia and Upper Asia, the North-Eastern ($\Pi \text{ } \approx \text{ } \approx$) Scythia, the South-Western ($\text{♄} \text{ } \text{♁} \text{ } \text{♅}$) Libya—*i e*, North Africa

Into these four quarters he proceeds to distribute the planetary influences, and to explain by their actions the character of the various nations, drawing a number of more or less flattering portraits, the European people under Jupiter and Mars are warlike and indomitable defenders of their freedom (unfortunately this is not true of all of them), but more inclined to friendship than to love. Britons, Gauls and Germans suffer from the absence of Venus. These barbarians are made by *Ares* and Mars into pederasts—in other words, Ptolemy, or rather his authority, Posidonius of Apamea, disliked them. The Lion and the Sun give a benevolent majesty to Italy—a compliment due to Rome by one writing under her domination—including Gallia Cisalpina (Lombardy), Apulia and Sicily, the Archer and Jupiter impart a love for cleanliness (*philokatharón*) to Tyrrhenia (Tuscany)—a compliment due to the civilised Etruscans and still appreciated by the Tuscans of Renaissance Florence—to Gaul and Spain, both provinces having by that time acquired from their Roman masters a taste for warm and cold public baths. In the Aegean basin—*i e*, in the centre of the Greek world, Ptolemy's ancestral home—the outflows of Saturn, Mercury and Venus, associated with those of Jupiter, produce equilibrated natures, healthy in body and mind, fond of "moderate liberty" (it was, indeed, considerably "moderated" by Roman dominion at the time'), scholars and artists who place—where Venus dominates—their art at the disposition of human pleasure and contribute to the elegance of life. The South-east—*i e*, Southern Asia—under Saturn and Venus in their Eastern phase, produces grave, solemn but voluptuous people (the Western idea of the polygamous Arabs and Indians). Those under the double influence of Venus and Taurus (Parthia-Media-Persia) contract incestuous unions (the *hvaethva datha* or

Zodiacal Signs and their 10° parts	Latin List of Hermes Trismegistus	Ptolemy " <i>Tetrabiblos</i> , II, chap 3	Paulus Alexandrinus
Ram	Ocean Bactria Lydia	Britannia ♄ & ♂ Galatia Germania and Bastarnia	Persia
Bull	Medes Amazons Semiramids (= Babylon?)	Cyclades ♂ & ♀ Sea shore of Asia Minor Cyprus	Babylonia
Twins	Teucrians Persians Parthians	Hyrcania II & ♀ Armenia Matiene	Cappadocia
Crab	Syria Assyria Ethiopia	Phrygia ☿ & ☾ Bithynia Colchis	Armenia
Lion	India Unknown country (beyond India) Unknown country (beyond India)	Italy ♄ & ☉ Gallia Apulia and Sicily	Asia Minor
Virgin	Arabia (Zenobia!) Armenia Elephantine (Queen Candace!)	Babylonia ♀ & ♀ Mesopotamia Assyria (Semiramis!)	Hellas and Ionia
Scales	Egypt, Nitria (oasis in the desert) Trachonitis Libya	Bactria ♄ & ♀ Caspia Serike (chora) i.e., China	Libya and Cyrene
Scorpion	Palestine, Phenicia Cilicia Cappadocia, Galatia, Phrygia	Syria ♀ & ♂ Cappadocia Commagene	Italy
Archer	Achaea, Pamphylia Sea of Cyrene Africa	Etruria ♄ & ♀ Gaul Iberia	Cilicia, Crete.
Capricorn	Mauretania Pannonia Galatia	Macedonia ♄ & ♄ or India Thrace or Ariana Illyria or Gedrosia	Syria
Aquarius	Syria Germania Sarmatia	Sauromatia ♄ & ♄ Oxiane Sogdiane	Egypt
Fishes	Britannia Dacia Chauci, Lycaonia Etruria, Italia, Campania	Lydia ♄ & ♀ Cilicia Pamphylia	Red Sea

Unfortunately the political geography of the ancient world—however powerfully it may have been determined by the unchanging stars in their eternal courses—became wholly obsolete through the Barbarian invasions of the Roman Empire

It was modernised as often as this became necessary by the Arabic early and late medieval translators and commentators of Ptolemy. The final re-adjustment still used by our modern political prophets is due to the painstaking effort of the famous Renaissance astrologist Fr Junctinus (Francesco Giuntini), printed in his *Speculum Astrologiæ* (1573). This is the source upon which our twentieth century star diviners base their "mundane" forecasts both in their newspaper columns and in their books on the political situation (above, p 25), of course without quoting it ever. I reproduce for the edification of the reader the astrochorographical table as given in such a classic as Alfred John Pearce's *Textbook of Astrology*, London, 1911 (with the worthy author's congenial portrait), pp 273 ff

"*Aries* influences Britain, Germany, Denmark, Lesser Poland, Palestine, Syria, Judæa. Towns Brunswick, Capua, Cracow, Florence, Marseilles, Naples, Padua, Saragossa, Utrecht, Verona, Leicester, Birmingham"

"*Taurus* influences" (not John Bull, as you would expect, but) "Asia Minor, Cyprus, Georgia, Caucasus, Media, Persia, Poland, Ireland, White Russia" and "the Archipelago" Towns Dublin, Leipzig, Mantua, Parma, Palermo, Rhodes"

"*Gemini* influences West of England, U S A, North east coast of Africa, Lower Egypt, Flanders, Lombardy, Brabant, Belgium and Sardinia. Towns London, Versailles, Metz, Lorraine" (which Pearce must have believed to be a city just as a famous British statesman at the Versailles Conference thought the Banat was a Hungarian town), "Bruges, Cordova, Nuremberg, Plymouth, Melbourne"

"*Cancer* influences Scotland, Holland, Seeland, North and West Africa. Towns Amsterdam, Cadiz, Constantinople, Algiers, Genoa, Berne, Lübeck, Magdeburg, Manchester (the last decanate), Milan, New York, St Andrews, Stockholm, Tunis, York, Venice, '*Vincentia*' (meaning Vicenza)"

"*Leo* influences France, Italy, Sicily, the Alps, Bohemia, *Chaldea* ancient Phœnicia and the northern part of Rumania. Towns Rome, Bath, Bristol, Taunton, Damascus, Prague, Philadelphia, Ravenna and Portsmouth"

"*Virgo* influences Turkey, European and Asiatic, *Babylonia*, *Assyria*, all countries between Euphrates and Tigris,

Greece, Thessaly, Corinth, *Morea*, *Isle of Candia*" (sic for Crete) "Croatia, Switzerland, West Indies Towns Paris, Lyons, Toulouse, Reading, Heidelberg, Jerusalem, Cheltenham"

"*Libra* influences the borders of the Caspian sea, part of Tibet, China, Japan, Austria, Bactriana, Savoy, Upper Egypt, ancient Libya Towns Antwerp, Charlestown, Frankfort, Fribourg, Gæta, Lisbon, *Placentit* (=Piacenza) Spires and Vienna"

"*Scorpio* rules Algiers, Barbary, Fez, *Judæa*, *Syna*, *Cappadocia*, Bavaria, Norway, Jutland, Valachia, Catalonia and the Transvaal Towns Dover, Liverpool, Frankfort (on the Oder), Messina"

"*Sagittarius* influences Spain, Hungary, Tuscany, Lower Italy (Taranto), France between Seine and Garonne to Cape Finisterre, *Arabia Felix*, *Dalmatia*, *Sclavonia* (¹) and Moravia. Towns Avignon, Sologne, Buda, Narbonne, Rotenburg, Toledo, Stuttgart, Nottingham, Sheffield, Sunderland on Sea (¹), Northampton"

"*Capricornus* influences India, Afghanistan, Punjab, parts of Persia about *Circan*, Chorassan, Thrace, Macedonia, the Morea and Illyria and Carni, Bosnia, Bulgaria, Styria, *Romandiola* (¹) in Italy, S W Saxony, Hesse, Mecklenburg, the Orkneys, Mexico Towns Oxford, Salisbury, Brandenburg, Prato in Tuscany, Constantz (sic¹), Toronto, Brussels and Port Said"

"*Aquarius* Arabia the Stony, Red Russia, Prussia, part of Poland, Lithuania, Tartary, part of Muscovy (¹), Circassia, Wallachia, Westphalia, Lower Sweden, Piedmont, *Azania* (¹), and Abyssinia Towns Treptow, Bremen, Hamburg, Ingolstadt, Salzburg, Trenton and Brighton"

"*Pisces* influences Portugal, Calabria, Normandy, Galicia in Spain, Upper Egypt, Nubia, Southern Asia Minor Towns Alexandria, Ratisbon, Seville, Tiverton, Worms, Compostella, Bournemouth, Farnham"

He begins by translating the chapter of Ptolemy analysed above and then asserts "No alteration whatever (¹) has been found necessary by the astrologers of the Middle Ages and those of the nineteenth century Countries like America, discovered and populated since Ptolemy's days, have been found by observation (¹¹) to have familiarities with certain signs"

Junctinus, from whom most of the table is cribbed, is not named, but place names like *Vincentia* for Vicenza, *Placentia*

for Piacenza, *Slavonia* for Slovenia betray the Latin, "Fribourg," "Brusselles," "Antwerpes" an intermediate French source. The modern additions are significant and amusing note *Judæa* and "Transvaal" under the poisonous *Scorpio*, the latter added of course, at the time of the Boer War. *Sardinia* is placed under *Gemini* because Corsica and Sardinia are twin islands—on the map, at least,—*Morea* and *Candia* under *Virgo* are the old Venetian names for the Peloponnesus and Crete. Pearce placed China under *Libra*, because Ptolemy does so for *Serica*, which is Latin for China, but Mr Rupert Gleadow, M.A. Oxon, has China under *Cancer*—following a source of the nineteenth century when China under her emperors was considered a "reactionary," "retrogressive" Power by the "progressive" Powers of the West. *Romandiola* in Italy for the Romagna is a gem. *Azania* is a wholly obsolete term of ancient Greek geography for a region in the Peloponnesus. Salzburg is under *Aquarius* because of the rains for which it is notorious, but why "Arabia the Stony" should be patronised by the man with the watering pot is a mystery. Perhaps because she would need irrigation to become Arabia Felix.

The modern astrologer will, of course, tell you, in this as in every other case, that these correlations are "based on" and have been "tested by" the millennial observations of ancient Egyptians and Chaldeans. The answer is that the ancient Babylonians were not concerned with the U.S.A., England, France and Germany or the U.S.S.R., but exclusively with *Amurru Elam*, *Subartu* (or *Gutium*) and *Babylonia*.

As to the old Egyptians, they were not interested in the fate of despicable aliens and "miserable foreigners" as they condescendingly called all their neighbours.

We do, indeed, find on the architrave of the temple of Kom Ombos the thirty six decans and the twenty four hours of the night and day correlated exclusively with the principal cities of the thirty six counties (*nomoi*) of Egypt. *Letopolis*, *Buto*, *This*, etc.

In an Egyptian world picture of about 300 B.C. in the New York Metropolitan Museum the thirty six counties of Egypt are placed in a circle, as it were around a compass-card—evidently so as to correspond to the circle of the thirty six decan stars. This correlation—which is completely at variance with the real geography of the narrow ribbon shape of Egypt—is nothing but an imitation of the Babylonian system of correlat

ing the countries of the world surrounding Babylon (or Assur) with the series of the stars of the astral compass-card (above, p 83, fig 16) But the purpose is evidently to place each of the thirty six Egyptian countries under the tutelary protection of the decan star particularly worshipped by its inhabitants The foreign nations around Egypt are left outside in the outer cold of nowhere It would have been blasphemy even to suggest that the divine stars of heaven could be bothered with the task of looking after them

XXVIII

THE "LOOPS" IN THE PLANETARY ORBITS, "STATIONS," "RETROGRESSIONS" AND "PROGRESSIONS"—MERE ILLUSIONS

THE principal reason why the planets became more and more prominent in Greek astrology, at the expense of the fixed stars—decans, zodiacal signs and *paranatellontas* receding more and more into the background against which the orbits of the planets are plotted—is the apparent irregularity of their "capricious," "straying" movements

Fig 33, p 203, shows the apparent orbits of the planets outlined against the zodiacal belt seen from the earth, as they would look if a small model of this belt were unrolled like a scroll and laid out flat upon the page of our book The heavy line in the middle of the three superior and three inferior orbits is the "path of the sun"

A still more instructive diagram can be obtained if we start from the "heliosatellitic" hypothesis that the sun and the moon revolve around the earth, but all the five "minor" planets around the sun This system was introduced into ancient astronomy in order to "save appearances" (*sōzein ta phainomena*) probably by the great geometer Apollonius of Perga (265 190 B C) It was re introduced and elaborated—in preference to the Copernican system—for the purpose of preserving the earth's position in the centre of the universe, which is so essential a basis for all astrological divination—by the great Danish astronomer Tycho Brahe (A D 1598)

This hypothesis enables us to obtain a projection of the

assumed movement of the planets upon the apparent sphere of the fixed stars which conforms to the appearances. The

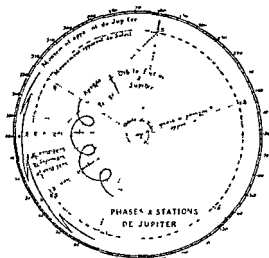


Fig 44

explanation given for Jupiter (fig 44) holds good for Saturn, the orbit of which has too large a diameter to be represented conveniently in such a small diagram. I suppose, the reader would prefer to look at him in conjunction with the Sun in the sign of *Leo* in the less schematical illustration used as a frontispiece for this book.

Seen from the earth, the planet will appear to advance (*propodizein*) until its movement almost coincides with the radius of the sphere projected as a mere point upon the celestial vault. Then it will appear to turn backwards and to recede (*anapodizein*) for a number of days, to stand still again, and then to resume its forward movement. The point where it seems to be "standing still" was called by the Greek star-clerk the *sterigmós*, by the Latin *statio*—both terms mere translations from the Babylonian.

The point at which the sun (S), the earth (T=*terra*) and Jupiter (Υ) are on one and the same radial line is called *sínodos* (*conjunctio*). In this case Jupiter is "irradiated" (*hupaugos*) or "submerged in the brilliance" of the sun, or "burnt by it" (*combustus*). When the sun (S) has reached a distance of about 120 degrees from the point reached by Jupiter (Υ)—which moves about twelve times more slowly than the sun—the first "standstill" is reached, and the "*retrogressio*" or "regression" begins. When Jupiter (Υ) has

reached the *perigee* and the line connecting the earth T with the sun (S^2), it rises when the sun sets (*akronychos*). The "regression" goes on until the moment when the sun (S_3) is about 120 distant—in the trine aspect on the right side of Jupiter (J^3) which comes to a "standstill" in the second position. Immediately the planet seems to start again on its forward movement with an accelerated motion but the sun overtakes it again and reaches it in the second "conjunction."

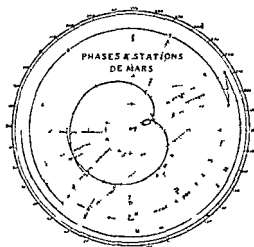


Fig 45

Fig 45 shows the great inequality in the apparent movement of Mars. The planet, describing the whole of its orbit in about 687 days, takes almost four months for "looping" the small "loop." The relative position of Mars and the Sun at the moment of the "stations" (first one O^4 and δ^4 , second one O^6 and δ^6) does not constitute either a trine or a square aspect (above, p 217, fig 38, and p 218, fig 39).

For the earliest Babylonian star worshippers and the Egyptians considering all the planets as nocturnal representatives of the sun (*Horus*es), the problem posed by these movements was not so much their seeming "capricious" character—that they were apparently "capering" or "straying" just as they pleased—but rather, on the contrary, their regular recurrence after equal measurable and calculable periods of time as revealed to the assiduous observation of the professional whole time star-watcher. Obviously, these apparent "caprices" were in reality dictated by obedience to the command of the

"laws" or "decisions" ruling "heaven and earth" (*pirishtē shamē u irsiti*), pronounced by the creator god at the beginning. It must therefore be possible for the star watcher to discover these laws, indeed, they would necessarily reveal themselves to the dutiful observer, who would consider it his moral and religious obligation piously to receive a revelation that must appear to be meant for the sedulous, enthusiastic star gazer. It was in the school of this pantheistic astral religion that humanity first learnt the duties of patient, unfaltering observation, duly put on permanent record and conscientiously interpreted by measurement and calculation.

But these records were—so far as we know—purely descriptive of what the Babylonians actually saw. It was reserved for the genius of the Greeks, in particular for that one, incomparably penetrating, immensely subtle mind of Parmenides of Elea (c. 480 B.C.) to discover the difference between the constantly changing impermanent and "flowing" appearance (*doxa*) of the world as seen by an individual observer and the "reality" (*to on*) or the "truth" (*aletheia*) valid for the common reason (Heraclitus' *logos vunos*) of all conscientious observers of all times wherever they might be situated.

Under the powerful impulse of this discovery Greek geometry succeeded in establishing the principles of what we now call "subjective perspective," which helped them to understand that a star might seem to "stand still" while it moved towards the observer or away from him on one of the radial lines connecting the observer's eye with one of the "fixed stars" or with any fixed point of the celestial sphere. This enabled them to see that a moving body passing in front of a static background might seem to recede, although it is steadily advancing, if the observer's standpoint is travelling at a greater speed than the observed object past certain fixed points of the "immovable" background.

It is this optical relativism or these relativist optics developed by the art of *skiagraphia*—the technique of "silhouetting" one thing against another, actually practised by Pericles holding a cloak before the eyes of a soldier in order to explain *ad oculos* an occultation of the sun—which enabled Heraclides Ponticus to see that he could quite easily explain the "apparent" rotation of the universe around the earth by attributing to the earth a rotation around its own axis. The experiences of the Delphic or Olympian sportsman racing his chariot and four in hand around an arena meant to represent the orbit of the sun, and

past the rapidly "receding" faces of the staring crowd of seated spectators, taught the Greek "amateur sage" (*philosophos*) a lesson which the sedentary, stolid star gazer and star-recorder of the East had never learnt. To the Hellenic thinker his very human gods gave the glorious gift "to see ourselves as others see us" or as others, racing on swifter quadrigæ, would see us. The Samian Pythagoras (sixth century B.C.) had the almost unbelievable boldness to think of this our solid, apparently unshakeably enthroned mother Earth as a planet, rotating around an invisible central fire. Empedocles (*Aetius* II 20, 13) has described and offered an explanation of what modern astronomers call "the counterglow" or more often "the *Gegenschein*," because it is erroneously believed to have been first observed by two Germans, Jahn and Brorsen, in 1856. Empedocles called this approximately circular intensification of the zodiacal light, appearing always exactly opposite the invisible sun and travelling like it over the night sky "*antanaklasis*" i.e., "counter refraction," a Greek term which should henceforth be universally used in honour of the Greek who first recorded the phenomenon.

Empedocles' statement that there are two suns—one of fire, one a mere reflection in the concave mirror of ice we call the sky, and Pythagoras' theory of an "invisible"—he means "almost invisible"—central fire are two different interpretations of this curious phenomenon for which there are various modern explanations which cannot be discussed in a short footnote—a sun invisible to us because we are supposed to stand on that side of the earth which is permanently turned away from the alleged central fire, just as we can see that there is one side of the moon permanently averted from the earth around which the moon is seen to circle. Either he or his disciple Philolaus gave still more rein to the free play of constructive imagination, and supposed the earth and an invisible hypothetic "counter earth" (*anti chthōn*) to rotate around that invisible centre, thus forming what we now call a "double star," numerous examples of which we know to exist among the "fixed" stars.

Such a bold conception of the universe having once been achieved, the persistent efforts of geometrical science to develop all its implications and to check them by a close observation of the phenomena could not fail to lead such an exceptionally gifted mathematician as Aristarchos of Samos to the discovery that the "heliocentric" hypothesis—which we now call "the

Copernican system (fig 46)—would best account for all the then known appearances

The hypothesis he put forward was definitely proved by Seleucus of Babylon (c. 150 B.C.), a Hellenised Chaldean.

§ A perfit description of the Caelestiall Orbes,

*according to the most auncient doctrine of the
Pythagoreans, &c.*

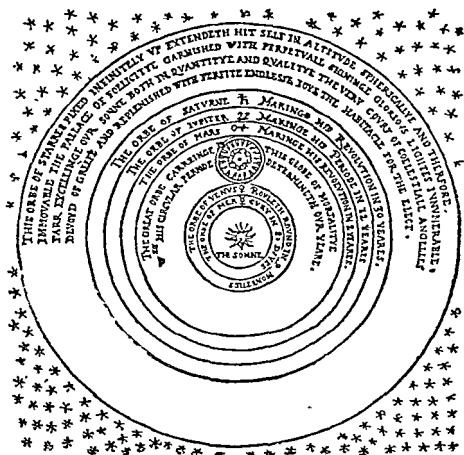


Fig 46

NB read *Lunus* = 'Moon' for *VLNUS*

Unfortunately, his work has been lost, so that we do not know how he set about it. But it is probable that he demonstrated the possibility of explaining all that could be seen in the sky by constructing a model of the universe on these lines—as Archimedes is known to have made one on the basis of the "heli-

satellitic," "geocentric" theory, and by describing in a book illustrated with suitable figures the way it worked. The deplorable fact, that the respective books of Aristarchus of Samos and of Seleucus of Babylon have been lost, while those of Ptolemy and of his disciples and commentators have survived, is manifestly due to the fact that these great and revolutionary astronomical discoveries were as unwelcome to the star worshippers and star-diviners as was their renewal by Copernicus and Galileo Galilei to the biblicist fundamentalism of Luther as well as of the Roman Church of the late sixteenth century.

The idea that "so many stars were waging war over the fate of one human head," ridiculed as preposterous by the philosopher Seneca, the contemporary of SS Peter and Paul, must have appeared even more absurd than before, if the earth was shifted from the centre of the universe and itself converted into a planet (fig 46) and if all the movements of the planets, formerly supposed to indicate changes of their "temper," were recognised as mere illusions, leaving the heavenly bodies themselves wholly unaffected in their constant unchangeable movements in simple circular orbits without "stations," "retrogressions" and suddenly accelerated "progressive spurts."

If the planets actually moved as they appear to do in our figs 33, 44 f it would seem plausible to think that these allegedly divine or demonic beings are "enfeebled" and "bad-tempered"—like soldiers during an enforced withdrawal—during their "retrograde" phase, but powerful, exuberant and in a favourable mood while advancing, hesitant and undecided in their "standstill" stations. As long as the naïve, "realistic" view is accepted that these "progressive" and "retrograde" movements are actually occurring as we see them, the psychologico-mythological explanation of these "caperings" and "strayings" might seem plausible.

So an intensive effort was made to explain these movements as "real" and as caused by the rays of the sun—what we should now call the impact of the sun's light upon the planets, reaching a maximum at the angle of 120° —the trigonal aspect—for Jupiter and for Saturn, while a "lighter" planet like Mars—one of minor "mass," as we should say now—was supposed to be "arrested" and "propelled backwards" already at an angle of 90° , the "tetragonal aspect" (notwithstanding the considerable discrepancy between the facts of our fig 45 and these fancies¹)

It is most instructive to read in Pliny the exposition of this astrophysical theory describing the planets as so many tennis-balls beaten backwards and forwards by the alleged racket-action of the sun

Another theory refuted as inept by Vitruvius explained the “stand-stills” and “regressions” by the “hesitation” of the stars and their “unwillingness” to stray too far away from the sun into the dark, where they cannot see their way any longer with sufficient clarity⁽¹⁾ Vitruvius himself replaces the alleged impact exerted by the rays of the sun by a hypothetical “attraction”—the ancestor of Newton’s more modern, but equally mythical “force” of “gravitation”—which is nothing but a pseudo-physicist’s rationalisation of the braking action supposed to be exerted upon the planets by the “reins” of the sun god imagined as driving his astral four-in hand like a trainer exercising a horse on a long leash and making it run round in circles in a riding-school, turn back and forward again

None of these theories can, of course, give any physical reason why the attraction or repellent action of the sun should be felt only at certain angles—trine or (about) square aspects—the long and the short of the whole matter being that all these theories are only mythologically plausible, but physically absurd

The fact that, nevertheless, they survived, while the rational explanations of Aristarchus of Samos and Seleucus of Babylon were forgotten, is simply due to the decisive sociological fact that the star-diviner could, and did make a permanent living as astrologer royal or municipal star-clerk, while the pure astronomer, intent upon discovering the truth and nothing but the truth about the universe, had to be that rare phenomenon, a gentleman of independent means, such as Heraclides Ponticus was, enjoying through the accident of birth or fortune sufficient leisure in a slave owning world which had not yet learnt the value of research leading indirectly to the economically valuable triumphs of applied science, and therefore held the scientist in the same low esteem as the engineer and “fire worker” (*banausos*—a prehellenic term for an occupation despised by the Greek citizen and the Roman patricians)

It was not until the age of the Renaissance, when the fire-arms of the new “artillerist”—i.e., the military artisan—had broken the pride as well as the castle-walls of the nobility, that the “head builder” (*archi-tékton*), the engineer and technician, the scientist and inventor of instruments—the man of Leonardo

da Vinci's type and stature—forced his entrance into the society of those educated in the “arts of the freeborn” (*artes liberales*)

It was in the age of the discoveries, when the navigational problem of determining with accuracy not only latitude but longitude focused the attention of ship-owners and admirals once more upon the development of nautical astronomy (above, pp 85 ff) that the scientific spirit began to develop lustily, and to select from the mass of ancient traditions those fertile ones which could be brought into close correlation with directly observed reality, because their authors had been independent thinkers, observers and constructors of hypotheses intended to “account for appearances”

When it became clear to Regiomontanus (fig 2), Copernicus, Galileo and Kepler that the apparent “standstills,” “retrogressions” and “accelerated progressions” of the planets had nothing whatsoever to do with the alleged “temper” or “power” of those beings which Plato and Aristotle had described as “visible gods,” it dawned upon them that, after all, the “atheist” and “materialist” view of Anaxagoras, describing the sun and the planets as glowing stones and the moon as another earth with a surface pock-marked by valleys and ravines, craters and lava-streams of extinct volcanoes—made visible by Galileo's telescope replacing the lenseless sighting tube of antiquity—might be truer than the Platonic and Aristotelian view handed down by the Church Fathers and the schoolmen. If the sun and the planets were but incandescent stones, their movements would, as Galileo saw, have to be explained in the same way as that of a stone falling—*i e*, freely “moving” through space

Copernicus, Tycho Brahe and Kepler were still busy calculating horoscopes for their sovereign patrons, making a living out of the liberalities received in return for these services, more than ever in demand in an age of adventure and adventurers. They still wrote philosophical treatises destined for their clients and intended to maintain the crumbling foundations of their “royal art” in good repair. But their own *bona fides* was obviously undermined, as we can clearly see from Kepler's famous saying about “astronomy the wise mother, astrology the foolish little daughter, selling herself to any and every client willing and able to pay so as to maintain her wise mother alive”

XXIX

ASTRONOMY AND ASTROLOGY DIVIDE NEWTON
ON ASTROLOGY—AN ASTROLOGICAL FORGERY

*"Nostra damus curi falsa damus, nam fallere
nostrum est*

Cum falsa damus nil nisi nostra damus'

Ours we give when lies we give—for to lie is
our business

When we give lies we give—nothing but what
is our own

Etienne Jodelle Sieur du Limodin

(1532-1573)

Epigram on Nostradamus

THE Elizabethan age stands at the cross-roads where astronomy, the science, and astrology, now no more than a "superstition," a mere atavistic survival of an ancient religion and of a magic practice invented in a remote past, parted company for ever. In Shakespeare's plays "astronomy" still means divining from the stars, while the word "astrology" is still applied to the scientific, disinterested study of the stars and its increasingly successful application to the problem of navigation. Galileo Galilei (1564-1642) still drew up a horoscope for his patron the Grand Duke Ferdinand I de Medici of Tuscany, predicting to his client, who died a few weeks after receiving it (1609), a long and happy life. But Kepler is the last great and original scientist who professed a belief in astrology as a technique of divination and published popular almanacs to keep the home fires burning.

This most significant fact has been intentionally obscured by modern astrologers claiming the support of such a towering genius as Sir Isaac Newton for their own vested interest in the ignorant and obscurantist traditionalism of their customers. Mr Rupert Gleadow (1940), "Sepharia" (1929) and probably others before them tell us that Newton, once taken to task for his belief in astrology, replied to his critic—according to "Sepharia," no less an astronomer than "Halley of comet-fame" "I have studied the subject, Sir, *you* have not."

The reader will immediately be shocked by the pompous tone of this alleged reply, striking such a discordant note, and at complete variance with the tenor of Newton's famous saying about the single pebble and the one coloured shell he found

at the shore of the vast and unfathomable ocean of unexplored truth. As a matter of fact, the anecdote is nowhere to be found either in Sir David Brewster's or in any other life of Newton, or in any one of his works or published letters. He was interested in alchemy—which was the chemistry of his time, intent upon solving a perfectly legitimate problem which has found its spectacular solution in our days—but there is no trace of his showing, at least in his mature age, the slightest preoccupation with or sympathetic interest in astrology.

Now, such a purely negative argument could never be conclusive. Although neither Sir David Brewster nor anybody else seems to know this story, and although neither Mr Gleadow nor "Sephariel" quote a source for their assertion, such a source might exist and might be trustworthy. But, fortunately for the glorious memory of Newton, we can completely clear it from this aspersion which rests on nothing but on an impudent forgery.

In 1911 we can still read in the last edition of John Alfred Pearce's *Textbook of Astrology*—the bible of all later still less learned astrologers—(p. 23, note 9) "There is some reason to believe that there may be a work on astrology by Newton in the possession of Oxford University." The truth is, of course, that there is no reason whatsoever for such a belief. If the University did possess such a precious and interesting relic, Dr Robert Theodor Gunther, late Curator of the Lewis Evans Collection of Scientific Instruments, Fellow of Magdalen College, would have known of and gladly published it in his nine volumes on *Early Science in Oxford* (1920-1932).

On p. 22 Pearce says "It is study, not prejudice, that causes science to advance. What should we say of a medical student who, examining a drawing of a skeleton, claimed to have discovered the emptiness of medicine? We may therefore form the same opinion of Sir Isaac Newton's alleged discovery of the emptiness of astrology. He did not examine, therefore he could not understand. He could not justly condemn, for 'ne damnant quod non intelligunt'."*

This complaint against Newton misjudging what he had not studied—although he is supposed to have written a book on the subject!—is turned round on p. 21 of Sephariel's or, to give him his true name, Mr W. Gorn Old's "*Hebrew Astrology, the*

* An adaptation for his purpose of Quintilian's reproach (*De Institutione Oratoria* Bk. X, ch. 1, sect. 26) "Dammant quod non intelligunt" they damn what they do not understand.

Key to the Study of the Prophets" (Foulsham, London, n.d., Bodleian copy received 6 11 1929) "It may be recalled that Mr Halley of comet fame had the temerity to upbraid Newton for his belief in Astrology, and on that occasion received the only rebuke which in the circumstances seemed appropriate 'I have studied the subject, Mr Halley, you have not'."

In order to appreciate the *a priori* verisimilitude of such a conversation between Newton and his friend "Mr Halley," the reader should remember that the latter came to Newton, then in Cambridge, in 1684, wrote the introductory verses to the *Principia*, bore the expense of publishing them and saw the proofs through the Press.

It is quite possible that "Sephariel"—who reproduces on p. 39 without acknowledgement the present writer's explanation of the 153 fishes in the Gospel of St. John—may not have himself perpetrated the perversion of the above quoted paragraph in Pearce's text book into this apocryphal anecdote. He may have cribbed it ready made from another source of similar "authority," just as credulous Mr. Rupert Gleadow, M.A. Oxon., took it over from "Sephariel" or from their common source. It does not much matter which one of the several anonymous or pseudonymous star prophets is responsible for the forgery, the essential thing is to know that it is derived from the venerable Pearce's *Text book*, who in 1911 still knew nothing of Newton's alleged defence of Astrology, but on the contrary "had the temerity" to rebuke the great master for rejecting its claim without having properly studied this pseudo-science, although there is actually good contemporary evidence for Newton, having said when he came up to Cambridge as a young undergraduate that he intended to study mathematics in order to "test the claims of judicial astrology."

So it remains an incontrovertible fact that after the discovery of Kepler's laws and Newton's principles—in other words, ever since the regular movements of the earth and the planets around the sun have been satisfactorily understood and explained—no professional or amateur astronomer of any repute has ever said another word in defence of astrology.

The only exception to this general statement worth mentioning is the mediocre and eccentric German mathematician and astronomer J. W. Pfaff of Erlangen University, who not only wrote a book on *Astrology* (1821), but tried to build up a whole new romantic cosmology. He gained a questionable immortality as a comic figure in Count Platen's satire *The Fatal Fork*.

Even an astronomer like N C Flammarion (1842-1925)—well known for his active interest in spiritualism and occultism in general—has said in so many words

“No fact of observation proves that the planets and even less the fixed stars have any action on our temperaments, aptitudes, acts or destiny. It is the last thing even remotely probable”

XXX

ASTROLOGY AND THE DISCOVERY OF URANUS, NEPTUNE AND PLUTO

IN 1781 Sir Wilham Herschel discovered the planet named, later on, “Uranus.” In the years 1845 and 1846 Adams of Cambridge, Leverrier of Paris, and Galle of Berlin found the planet they called “Neptune.” Finally in 1930 the planet named “Pluto” was discovered where Professor Percival Lowell of Flagstaff Observatory, Arizona, had predicted it ought to be.

Herschel had first named his planet “*Georgium Sidus*,” in honour of his royal patron, King George III. Others called it “Herschel” after its discoverer. The mythological name given to it in preference to the original ones has, of course, not the slightest connection with its physical qualities. There is nothing particularly “heavenly” about Uranus which could justify its being given the name of the Greek sky god *Ouranos*. Nor has “Neptune” anything to do with the sea, or “Pluto” the least connection with the dark “Underworld” of the dead.

It is hardly necessary to say that no “millennial experience” suggested anything about the influence which the three newcomers might be supposed to exert upon the fate of humanity. John Alfred Pearce admitted in both editions of his *Textbook* (1879 and 1911) that he would need at least 3,600 (!) “Uranian nativities” in order to determine “empirically” the influence of the “new” planet upon the character and fate of men born under its ascendance. As to Neptune, he says in the original edition “Sufficient time has not yet elapsed for appreciating its qualities.” But “occultists and psychics”—the modern equivalent of the “prophets” of old—“are inclined to say,” etc., etc.

Nevertheless the astrologers of the nineteenth century could not avoid mythologising “Uranus,” and “Neptune” on the lines

suggested by the theories of their Greek predecessors about the character of "Mercury," "Venus," "Mars," "Jupiter" and "Saturn."

The undeniable fact that ancient astronomers had not taken them into "con-sideration" at all was used by Godfrey Higgins in his *Anacalypsis* and by good old John Alfred Pearce as a welcome excuse for the equally undeniable fact that their predictions had so often been erroneous. This naïve argument disposes, of course, at one single stroke of the basic theory that all the essential astrological knowledge is based either on an original divine revelation at the beginning of the ages, or on the "millennial experience" of the ancient oriental star-watchers. If these great mysteries were revealed to early kings and high-priests by a god of wisdom, why did Hermes Trismegistus not reveal the existence of the three outer planets? Conversely, if the "millennial experience" of the "Chaldeans" and Egyptians did not prevent the astrologers of old from making numerous mistakes caused by their ignorance of the existence of three more planets, what is the evidential value of the alleged "millennial experience"? And if the sacred number seven of the planets is no more the true number of these "erring stars"—if there were, indeed, never "seven planets," any more than there really ever were any "erring" or "straying" stars at all—what remains of the wonderful *heptagram* (above pp. 198 ff., pl. xvi) and the system of "planetary hours" (above, pp. 211 ff., fig. 34) days and years? What, indeed, of the distribution of the planets over the zodiacal signs (above, p. 192, fig. 31), the whole scheme of "houses" (above, p. 32, fig. 4b), "exaltations," "depressions," etc? What, indeed, of the whole system now completely shattered in every single element?

So we need not be at all astonished to find a number of nineteenth-century astrologers, wanting to keep their old *septizonium*-system (above, p. 210) unaltered, who put forward the thesis that the new "telescopic" planets could have no influence on men, because they could not be seen with the naked eye. They forgot that this argument would apply with equal force to all the planets obscured by clouds at the moment of a birth or of a conception, so that the star-diviner would always have to know how far the sky was clear or overcast at the moment when their client entered upon his terrestrial career.

Also, this attitude smacked too much of reactionary "old-

fashioned" obscurantism. So we find the more "progressive" modernist leaders of astrology asserting resolutely that "astrology has no quarrel with science"—a concession for which science is duly grateful—and has "nothing to fear" from science discovering more and more planets. *Magister artium* Rupert Gleadow "deduces," indeed, "from astrology (¹) that there may be one or two planets beyond Pluto which astronomers have not yet discovered."

Presumably by some "occult" insight or "psychic" virtue, he, however, has actually discovered that "Pluto appears to rule *Aries*," that he is an "ally of Uranus" and an "enemy of Saturn." We also hear that characterologically "Pluto stands for the individual claim to independence." This is a most amusing statement, since it betrays unwittingly the political orientation of astrology pointed out with such clarity by Mr Tom Harrisson (above, p 16). For people who believe that whatever powers there be must needs be appointed by planetary predestination, it is obvious that all libertarian striving for personal independence must be due to the instigation of the dark ruler of the Underworld, "Pluto."

On the other hand, Mr Gleadow and others before him tell us that "Neptune stands for the absorption of the self in something great and wonderful," for "mysticism," and causes "an exaggeration of emotion often taken for spirituality." Now, every psycho-analyst knows that in dreams "water" stands—because of a very transparent association of ideas—for "depth," especially the deep abysses of the sub-conscious or unconscious self. So the completely irrational accident that the mythological name chosen by Dr Galle in 1846 for the newly found planet assigned this star to the god of the deep sea is the only reason why the astrologer connects it with "mysticism," genuine or spurious "spirituality" and all similar features. But, of course, for the devout occultist there are no irrational accidents, and it is quite evidently the planet god Neptune himself who coerced even a human being so refractory to mystic influences as the late Dr Galle, astronomer of Potsdam Observatory, into giving the one and only appropriate name to "Neptune."

"Uranus," we are told, is the patron of "machinery"—naturally, since *ouranos* means "sky," and since the sky is for the mind of the astrologer (above, pp 31 ff, fig 3), a vast machine of wheels within wheels and wheels upon wheels (the Ptolemean epicycles). Because of this purely imaginary clock-

work of the sky, Uranus is the patron of machinery, and, says Mr Gleadow, the discovery of Uranus in 1781 ushered in the age of machine power and started the industrial revolution—a little slowly, it would seem, since James Watt erected his steam-engine in Birmingham seven years later only, in 1788

Here we are evidently back again at the argument that the planet did not influence earthly life before “he” had been discovered and could be seen, at least by astronomers with powerful telescopes. But in the very sentence before the monumental statement about Uranus’ influence suddenly developing about 1780 (presumably forcing Sir William Herschel to focus his attention upon it), we read “Of course, it must not be thought that Pluto had no influence before he (1) was discovered. He existed and affected us whether we knew it or not.” Evidently, the principle of non contradiction does not exist for the astrologer. Also, Mr Gleadow expects that Pluto, who “existed and affected” men since the beginnings of human history, will, now that “he” has been discovered, “develop his influence.”

As to Godfrey Higgins’ and Pearce’s attribution of the “errors of old writers on nativities” to their ignorance of the outer planets, Mr Gleadow has good comfort for his readers. “The data upon which older astronomers worked were incomplete, but that does not mean that they were false. On sound but incomplete data they came to sound but incomplete conclusions.” Would it be too much to hope that Mr Gleadow might be candid enough to admit that they rather reached completely unsound conclusions on the basis of evidently incomplete and wholly unsound data? Instead of this he says “Three new forces to consider should make a great deal of difference. They do, but it is worth observing that they correspond to things that have since been discovered” (see above, p 244 f, on Uranus and machinery)

It needs I think, no ghost returned from beyond the veil to tell us that they do correspond to things recently invented, because the nineteenth and twentieth century astrologer felt the desperate need to find planetary patrons for recently discovered things, such as railways, motor cars and aviation, just as their Greek forerunners had to fit the new profession of water millers into their system (above p 125). Since Ptolemy and his Arabic translators knew no airplanes, blimps or Zeppelins, they did not establish Mercury with his aileron equipped sandals as the tutelary star of aviators. So aeronautics can now conveniently

be put under Uranus, god of the sky and star-genius of wheel-driven machinery Neptune will watch over submarines, and dark Pluto's growing influence can be held responsible for the black out that has spread for six years over a great part of the earth, extinguishing the lights of civilisation which "have gone out and will not be re lit in our generation," as well as for the invention of the atomic bomb (probably in close 'conjunction' with Uranus, patron and godfather to 'uranium') What a blessing it must be for these simple minds to put the blame for the mad things Dr L P Jack's "*Homo insipiens damnatus*" does and suffers on somebody or something else that is beyond our reach and cannot by any means be identified with their own silly selves on the inevitable day of reckoning!

XXXI

"IATRO-MATHEMATICS"—ASTROLOGICAL MEDICINE

There is one subject which is no longer dwelt upon in Mr Gleadow's "*Astrology in Every-day Life*" of 1940, to which three extensive chapters were still devoted in the second edition of Pearce's textbook in 1911 astrological medicine. But it would be a great mistake to conclude from this omission that at least this particular application of star divination is dead Astro-medical quackery is still practised by charlatans and astro-medical literature still published by "Raphael"—which means "Healer god" in Hebrew—by "Zadkiel" (Hebrew for Jupiter) and other benevolent archangels

There is even at the disposition of readers interested in this discipline a whole "*Encyclopedia of Medical Astrology*" issued in 1933 by the Cornell Publishing Society, Los Angeles—the city of which Hollywood is the best known suburb—and for the U K by L N Fowler, Ludgate Circus, London, and written by Howard Leslie Cornell, "Hon Professor of Medical Astrology of the First National University of Naturo-pathology (sc!)" and all Sciences, Newark NY, and Montreal and of the British Institute of Medical Astrology and Metaphysical Science, formerly National Secretary of the National Astrological Society

of the U.S.A. and of the American Astrological Society" The author's imposing and confidence-begging portrait is on the title-page of the heavy volume

If the above quoted titles of this professor *h c* do not impress you, as they should, I can give to anybody who has a right to know it the Harley Street address of a properly qualified British medical practitioner who still—or rather again—takes her patients' horoscopes before embarking on a diagnosis

It would, therefore, be indefensible to say nothing about the application of astrology to medicine, which was the direct consequence of the ideas analysed above (p. 118) on the influence of the stars on the "temperament"—i.e., the "mixture" of the alleged "four elements" supposed to constitute the body of all living beings—plants, animals, men—and the substance of all organic and even inorganic matter

Astro-mineralogy and the astro-alchemical correlation of the seven planets with the various metals and precious stones on the basis of their colour was inherited by the Greeks from their oriental neighbours

It is certain that both the Sumerians and the Egyptians called iron "the metal from heaven" (Sumerian *AN BAR*, Egyptian *bja nū pet*)—in other words, that they considered all iron as meteoric and that they knew meteoric stones. The Persians certainly concluded from the fall of those meteoric stones that the vault of heaven must be built of stone (*lapis lazuli*, azure stone). The comparison of the Greek (loan) word *sideron* for "iron" with Latin *sidus*, plur. *sidera*, "stars," suggests that the stars, or at least some stars were supposed to be of shining polished, or white-glowing iron, and that iron meteors were known to be "stars" fallen to the ground

The Greek word *chalkos* for "copper," "bronze," is a loan-word borrowed from the Chaldic metallurgists of Urartu (the biblical Ararat in modern Armenia). *khal-khi* means "from the sky," "belonging to the sky" (*khal*), because the men of the copper- or bronze-age believed that the sky, seen to glow in red splendour after many a sunset, was made of burnished copper, the *chalkeos uranos* still found in Homer and even in Pindar

Nothing could be more natural for metallurgists conversant with the meteoric origin of the iron they worked than to suppose that all metals were of meteoric origin. As a matter of fact, we have a Babylonian list of metals in which all their names are prefixed with the determinative sign of the star, in cuneiform read *AN*, and meaning "heavenly," "celestial,"

"divine" It was equally natural to connect the several metals according to their colour with the stars from which they were thought to have fallen. It would seem plausible that gold came from the sun, silver from the moon. Copper, *cuprum*, imported from Cyprus, the "copper" island, would, naturally, be connected with Kypria, the patron goddess of Cyprus—i.e., Venus and her planet. Tin, called "white lead" by the ancient metallurgists, would be associated with the silvery planet Jupiter, lead, called "black lead," with the slow, 'heavy going,' dimmest, darkest planet Saturn. "Quicksilver" is to this day called "mercury" because it was naturally identified with the swift and mobile messenger god and his planet. Iron would of course, be believed to fall from the planet of the war god *Arēs* Mars.

When the Greeks had introduced the notion of the seven planetary spheres revolving like wheels within wheels (pls. m f) and carrying the respective "errant stars" across the field of vision, souls would be believed to have to traverse on their downward way to incarnation these seven spheres, believed to be made of the various planetary metals. Each passage was supposed to invest the fiery soul spark with a thin coat of the respective metal. In this way the incarnation of the soul in the body would be believed to add a certain amount of more or less precious metal to the "common clay" out of which man was believed to be fashioned. Sir Thomas Browne (1605-1682), the famous author of *Religio Medici*, still wrote of himself "At my nativity my ascendant was the earthly sign of Scorpius, I was born in the planetary hour of Saturn, and I think I have a piece of that leaden planet in me." Plato uses this theory, which he calls "a Phœnician fairy tale" (*Phoinikikḗn pseudos*), for the purpose of explaining the difference between the noblest men, divinely destined to govern by an admixture of gold, and the next best people, who have got some silver attached to their soul, from those fatally qualified for their servitude by the addition of some iron or copper.

We may take his word for it that he got this yarn—which he finds such a convenient explanation of the social inequality of men—from the Phœnician sailors who shipped him to Egypt. The Phœnicians themselves may well have got it from the Babylonians, from whom they seem to have learned their metal-craft.

At least this is suggested by the discovery of cuneiform Babylonian chemical and metallurgical texts, as well as by

Herodotus' much-discussed description of the seven colours of the seven stories of the Babylonian temple-towers and a number of correlated testimonies.

Just as metals were associated with the planets by an undue generalisation of the celestial origin of meteoric iron, an equally unfounded generalisation of the celestial origin of meteoric stones, led to the belief that all precious stones had fallen from the sky, imagined to be a vault of blue sapphire or lapis-lazuli studded with the diamonds of the white, the rubies of the red, the emeralds of the greenish stars, etc.

A series of twelve precious stones—inserted into the breast-plate of the Jewish high-priest for the purpose of divination by means of the *Urim* and *Thummim*—allegorically interpreted as *Urim thamin*, the "perfect lights" i.e., the stars—were astrologically co-ordinated with the twelve signs of the zodiac and the thirty-six decan-stars in a hieroglyphic list on a wall of the temple of Denderah. Cuneiform Babylonian lists of precious stones, metals and minerals sacred to the various gods and their constellations have been found in Niniveh (Kujunjik) and Uruk (Warka) and are now in the British and Berlin Museums.

The connection between stars and their plants (the astrology responsible for such names as "sun-flower," "*hēli-anthus*" and "*flos Jovis*") is, of course, a development of a particular group of notes in the star-calendar (above, p. 155). As the peasant would note the star in the calendar signalling the sprouting, blossoming and fruiting of corn, barley, vines, date-palms, sesame, etc. (fig. 47), the gardener in charge of the medicinal herb garden would do the same for the plants under his care. A slight amount of empirical correlation would be expanded in the usual way by the verbal or other associations of ideas so dear and indispensable to the mystic and magician believing in a cosmic system pervaded by the 'holist' principles of "universal sympathy" and "*sacra analogia*."

The "anthropomorphic" interpretation of the sky as a face, and of Sun and Moon as "the Right" and "Left Eye" in it, would necessarily lead to a development correlating the seven sense-organs in the human head—two eyes, two ears, two nostrils and one mouth—with the seven planets as we find it in the Hebrew Neo-Pythagorean treatise "*Sepher Yezirah*" ("Book of Creation," literally "Formation" or "Design"). The equally anthropomorphic idea of a sky-god or sky-goddess arched above the Earth so familiar to Egyptian art (pl. vi) would suggest a co-ordination of the seven limbs of this divinity—one

determining the propitious times for such operations as blood-letting, cauterisation, etc. A knowledge of the zodiacal signs or decan stars supposed to rule over the limbs of man, and to afflict them with all the diseases to which the mortal flesh of the suffering human race is subject, would enable the "star read" medical practitioner who called himself for this reason an "iatro-mathematician" to "calculate" and to compose for each patient the proper phylactery guarding him against malevolent astral "influences"—whence the name "influenza" or "flu"—or curing the "star struck" (*asteroblētos*) already affected by one of the maladies catalogued in these lists, as the "Hungarian physician" who gave Erasmus an "astrological" drinking mug shaped like a lion (above, p 97 f) Having taken his beverage from this vessel for some time, Erasmus felt better, but doubtful whether the improvement was due to its use or not

All these correlations—completely devoid of any empirical scientific foundation—are said to be derived from divine revelations vouchsafed by the Egyptian Hermes Trismegistus to his son, the divine physician Asclepius. The truth is that the macro-microcosmic diagrams in question are derived from pantheistic idols such as the figure of the Orphic primeval god Phanes—the personified "Appearance" of the visible world—or the Mithraic statues of "unending Time" (in Greek *Chronos aieiros*, in Persian *Zrvan Akarana*) all of which show the body of the divinity encircled by a serpent symbolising the orbit of Sun and Moon, meandering through the constellations of the zodiac (pl xvi)

It is easy to see that such a "universist" system establishing a pseudo-consistent co-ordination with the sky of all the three realms on earth—the mineral, vegetable and animal kingdoms—on the basis of the general principle, "As above so below," embracing what might be called ancient astro-physics, astro-chemistry or alchemy, astro-mineralogy, astro-botany and an astro-zoology based on the alleged existence of a Bull, Ram, Lion, Crab, Serpent, Scorpion, of an Eagle, Swan and various Fishes in heaven, would inevitably exert a powerful attraction on the speculative trend of the superficially rationalised mind of the Hellenised Oriental, the product of the Greek and Roman conquest of the Eastern world

It is this hybrid legacy, transmitted through Greek translators of Egyptian paraphrases of Babylonian cuneiform tablets, through Arabic versions of Greek texts translated from the Arabic into Hebrew and from Hebrew into Latin by Dalmatian,

Sicilian, Spanish, French and German Jews, to Medieval and Renaissance Europe, which fills to this day the muddled minds of modern "occultists" of all descriptions cherishing this "mystery lore" the real origin of which they persistently and deliberately ignore

Considering the overwhelming influence of Græco-Arabic and Judæo-Arabic tradition on the leading medical schools of Salerno and Montpellier, it need not surprise us that Torella, physician in ordinary to Pope Alexander VI and to his nephew Cesare Borgia, explained the contagious disease to which Girolamo Fracastoro, physician and poet of Verona (1483-1553), gave the name "syphilis" in 1530, and which had befallen both the august patrons of Torella as due to the conjunction of the four great planets in *Scorpio* which had taken place in 1484. The same opinion was expressed by such authorities as Basilius Valentinus and Petrus Maynardus. The latter predicted that the epidemic would disappear in 1584, when another particular constellation would occur. Theodericus Ulsenius' treatise printed in 1496 on the astrological causation of syphilis by the constellation of 1484 was illustrated by Albrecht Durer (fig. 48). The engraving shows a poor devil afflicted by what people then called either the French or the Spanish disease, according to which foreign mercenary troops had brought it into their own country. It is hardly necessary to mention that syphilis has been shown by Drs. Roux and Metchnikoff of the Pasteur Institute (1905) to be an infection of the blood with a micro-organism known as *spirochaeta pallida*, discovered by Drs. F. Schaudinn (1887-1906), and Hoffman, that it was imported into Europe from America by the crews of Columbus and the other conquistadores, and has nothing whatsoever to do with any planet or with the constellation *Scorpio*. It did not, of course, disappear in 1584, but has remained endemic throughout the "civilised" world. Until this day this and similar diseases are called by the astrological term "Venereal" infections, and the application of quicksilver iodide as an effective antidote was discovered accidentally by "iatro-mathematicians" trying to counteract the noxious influence of the malefic planets by a "mercurial" salve.

Syphilis is by no means the only contagious disease attributed to the influence of the stars. The very name "*influenza*"—commonly abbreviated to "flu"—is nothing but the Italian translation of the Greek *aporhoia*, the "flow coming down" or "flowing into" the patient from a malefic star. Even such an authority as Guy de Chauliac—called by the inventor of the

Ignorant of this ætiology of bubonic plague, the Paris College of Physicians attributed the Black Death of 1349 to a persistent fog caused by a struggle of the constellations combating the rays of the sun, and to a violent battle between the warmth of the heavenly fire with the waters of the great sea, which would continue to spread as long as the sun should be in *Leo*. It is necessary to recall the memory of this pompous assembly of hooded doctors, huddled together in helpless terror and shrouding their pious vain hopes that the "dis aster" would at last come to an end one day with the damp heat of a sultry midsummer in this threadbare cloak of high sounding words, in order to feel the proper gratitude we owe to the long succession of honest and painstaking scientists who have liberated empirical research from the shackles imposed upon the human mind by what Hippocrates contemptuously called *banausia*—i.e., by irrational popular prejudice and outworn oriental tradition.

It is this memory which will inspire us with the contempt it deserves for the preposterous demand raised by Mr Rupert Gleadow, "member of the British Council of Astrologers," that astrology should again be taught at our universities, as it was when students had to learn how to cast a "decumbiture"—i.e., a horoscope of the hour when the patient fell ill—in order to diagnose his malady, to prescribe the proper remedies (including charms and talismans) and to determine the propitious day, hour and minute for an eventual operation.

There was a time when regular chairs for astrology were established at the papal university of the Sapienza at Rome—by the Medicæ Pope Leo X—at Padua, Bologna, Pavia, Mantua, Salamanca and Paris. There was a time when Merton College, Oxford, was the most famous centre of "iatro-mathematical" i.e., astrologico-medical studies, but we are not any more in the year 1528 A.D. when Antony Dalater, undergraduate of St Alban's Hall Oxford, was arrested by order of Cardinal Wolsey for reading Lutheran books while his accomplice Master Garrett succeeded in escaping the Proctors, and when Dr London, Warden of New College, Dr Cottesford, Rector of Exeter College and the Rector of Lincoln College, then Vice Chancellor of Oxford, employed an astrologer named Gadbury to find out the whereabouts of the fugitive. The stars told them that the hunted boy—in a tawny coat—had turned to the South East. Actually the poor devil was arrested in Bristol.

Mr Gleadow must be sadly ignorant of the spirit of his own *Alma Mater* if he thinks that these times are ever likely to recur,

however fervently the British Council of Astrologers and the millions of starquacks' dupes may desire it

XXXII

THE SURVIVAL OF SUPERSTITION IN THE AGE OF SCIENCE

Kull munaggim kadib

All astrologers lie

Arabic Proverb

"In Alexandria the tax imposed on astrologers was called 'the fools tax' (blakonnomion) because their clients paid it for them

*Suidas Lexikon and the Etymologicum Magnum
su blaka*

If it were possible to kill superstition by ridicule, astrology would have been dead for more than two hundred years. In France the philosophers of the age of enlightenment at the end of the eighteenth century had pitted their wits against it. Voltaire (1694-1778) himself had been the subject of two horoscopes, one by an amateur, the Comte de Boulainvillier, the other by a celebrated professional called Colonne. Following the established rules of the game, both predicted that he would die at the age of thirty-two. But the victim of this astrological death sentence "had the malice to live thirty years past that age, for which he humbly begged the pardon" of the two star clerks.

In this country the most spectacular attack on contemporary mass astrology was made by that formidable satirist Dean Jonathan Swift. His attention was aroused in the year 1707 by an almanac maker trading under the name of "Partridge," whose real name is believed to have been Hewson. The man, a cobbler by profession, who turned in his thirty-sixth year to the more lucrative business of astrologer and almanac writer, had frequently published advertisements warning his public against "impostors"—just as in our days the trade union calling itself the "Federation of British Astrologers" professes to "combat quackery." Provoked by this impudence, the Dean decided to teach "Partridge" a lesson by himself publishing "*Predictions for the year 1708, by Isaac Bickerstaff*" Written to prevent the People of England from being further imposed on by vulgar

Almanack Makers" In contradistinction to his colleagues offering only vague and general predictions, "Isaac Bickerstaff" set out to offer definite and precise forecasts

"My first prediction is but a trifle, yet I will mention it, to show how ignorant those sottish pretenders to Astrology are in their own concerns. It relates to Partridge the Almanac maker, I have consulted the star of his nativity by my own rules, and find he will infallibly die upon the 29th of March (1708) next, about eleven at night, of a raging fever. Therefore I advise him to consider of it, and settle his affairs in time."

This prophecy was accompanied by a number of others, predicting—in accordance with the feelings of the time—the impending demise of most of the notabilities of France. In the introduction "Bickerstaff" promised to publish a "large and rational defence" of Astrology and challenged Partridge and the rest of his clan to "hoot me for a cheat and impostor if I fail in any particular of the moment."

It is not known whether Hewson was frightened by the oracle or not, but it is certain that he developed no "raging fever" and survived the 29th of March triumphantly—only to be faced with a new pamphlet entitled "*An Account of the death of Mr Partridge, the Almanac Maker, upon the 29th instant, in a letter from a Revenue Officer to a Person of Honour,*" describing in all detail the particular circumstances of his death, within four hours of the time predicted by Isaac Bickerstaff. The alleged tax collector reported having visited Partridge a few days before his death, when he showed already unmistakable symptoms of the fatal disease. He then heard that the patient had taken to bed, and very soon that he was *in extremis*. He then quoted word for word the conversation with the dying man, in which Partridge protested that "*Bickerstaff's Predictions*" could not have been genuine. Nobody knew better than Partridge that all such forecasts were frauds devoid of any foundation whatsoever. "O sir! this is no time for jesting, but for repenting those fooleries, as I do now, from the bottom of my heart." Having heard this and more similar confessions, the revenue officer said, he had to depart, "being almost stifled by the closeness of the room." He waited in a nearby coffee house until news was brought him of Partridge's death, at five past seven, "by which it is clear that Mr Bickerstaff was mistaken by almost four hours in his calculation, but that in other circumstances he was exact enough!" To give final credence to this, Swift published, at the same time, "*An Elegy on Mr*

Partridge, the Almanac maker, who died on the 29th of this instant, March, 1708," a document embellished with crossed marrow-bones, deaths with darts, and winged hour-glasses.

In spite of the furious Partridge publishing an immediate reply indignantly calling attention to the fact that he was still alive, the practical joke was continued with the enthusiastic collaboration of more and more of the town's wits. This is Partridge's "own account":

Between the hours of 8 and 9 the church bell tolled, and his maid, on enquiry, was informed that it was for the death of Dr. Partridge, the famous Almanac Maker. Partridge refused to take the bait, and was continuing his preparations for bed, when there were heavy knocks on the door, and he was confronted by a "sober grave person" who turned out to be the undertaker. The undertaker insisted that Partridge was dead, and that arrangements had been made for his funeral. When the visitor had at last been persuaded to go, Partridge went to bed, but he was called out by his old acquaintance Ned, the Sexton, who wanted to know if the "Doctor had left any orders for a funeral sermon" Partridge protested, but Ned was obdurate, going so far as to accuse the Doctor of intent to defraud the church."

"In short," the account goes on, "what with Undertakers, Embalmers, Joiners, Sextons and Elegy hawkers, I got not one wink of sleep that night, nor scarce a moment's rest ever since."

The next three months were a long succession of annoyances for the prophet. He would be stopped in the street, and asked for money for the coffin and for his funeral expenses. Even the Reader of his parish sent two or three times for him to come and "be buried decently"; while, greatest blow of all, at Stationer's Hall the tract announcing Partridge's death was taken seriously, and he was struck off the rolls—a grave matter for the prospects of his Almanac.

To all his protestations and abuse, "Isaac Bickerstaff" rejoined sorrowfully that the astrologer had behaved badly. Such usage, he said, was "very indecent from one gentleman to another," and did "not at all contribute to the discovery of truth, which ought to be the great end in all disputes of the learned."

The unhappy Partridge protested that the truth was all on his side. Swift rebuked him for showing undue heat in an argument over a philosophic point. It was, he said, wholly unbecoming a person of education "to call a man a fool and villain, and an impudent fellow only for differing from him in

a point merely speculative," and followed thus up by maintaining that, even if Partridge the cobbler still showed signs of vulgar life, Partridge the Almanac Maker had died with his reputation.

Partridge was, of course, obliged to cease publication of his Almanac. It was not until nearly seven years later that he took heart again, and published his "*Merlinus Redivivus, being an Almanac for the year 1714*," by John Partridge, a Lover of Truth, having noticed that the sale of competing almanacs had simply been increased by the disappearance of his own.

It is most instructive to see that the spectacular discomfiture of Partridge in no way diminished the total production or sale of astrological almanacs to the habitual buyers of this sort of literature from which, to this day, a small group of publishing firms and their literary hacks derive a steady, substantial revenue.

The reason why Dean Swift could not stop or even diminish this poll tax imposed by a few crafty exploiters upon hundreds of thousands of credulous "ordinary citizens" in all walks of life, including certain "captains of industry," magnates of finance and political leaders—any more than this little book will be able to impair in the very least the sale of the various astrological periodicals and tracts, or stop a single newspaper astrologer's pratings—is quite simple. Centuries ago, Cardinal Carlo Caraffa said

"populus vult decipi, decipiatur!"

a truism which Robert Burton translated in his "*Anatomy of Melancholy*" into plain English: "If the world will be gulled, let it be gulled."

Deeply rooted in the thought of a remote past, when it did represent the most rational explanation of the world of which humanity was then capable, astrology is still a living faith in the minds of the millions who have not yet outgrown the pre-scientific stage of evolution of human intelligence.

Neither the scientist nor the historian can hope to eradicate such a deep-rooted and widespread conviction from the minds of his contemporaries.

The psychologist, who will readily tell him why that is so, does not indeed see in this tenacious survival of this or any other similar belief any proof of some inherent truth or intrinsic value. The argument that "there must be something in it" because "so many people believe in it" does not impress him overmuch. He has learned from the great Swiss psycho-analyst Professor C. G. Jung that the sub-conscious layers of the mind somehow

contrive to preserve all the successive strata of the most primitive imaginations evolved in the course of the history of religion, long after they have been recognised as erroneous by the clear consciousness of the rational individual

It is, indeed, a paradox to see books of Sir James Jeans and *Old Moore's Almanack* sold for sixpences and threepenny bits respectively over the same counter of our great general stores, not, of course, to the same customers, but still to inhabitants of one and the same big city. Yet this is no more astonishing than the fact that Nordic mythology and the crudest forms of primitive ancestor worship should have regained in our days such an overwhelming hold over a vast section of what used to be called not so long ago a nation of scholars and thinkers, and that these superstitions manage somehow to coexist with the most radical agnosticism and militant atheism of an anti church mass-movement

If we are told on the dubious authority of the English journalist who pretends, most amusingly, to have been "Herr Hitler's chambermaid" that the *Fuhrer* was wont to consult an otherwise unknown astrologer Karl Ossietz, even as that famous leader of the Thirty Years' War, Prince Wallenstein, used to take counsel with Seni and the great Kepler three centuries ago, and if this should be more than the negligible gossip of an alleged servant, or if it should be true that the famous soothsayer Frau Ebertin, said to have been murdered by her competitors for his favour, was Hitler's astrological Egeria,* and that King Boris of Bulgaria was under the influence of an astrologer named Luchev executed after the Russians had marched into his country, the explanation of such startling facts would still be quite simple the successive stages in the evolution of the human mind are not separated from each other by clear cut chronological divisions, or connected by gradual uniform transitions, but dovetailed through the most unexpected survivals and atavistic throwbacks. New ideas do not enter a mind swept clean of all its preconceived obsolete notions and antiquated obsessions, but are merely superposed upon earlier layers of imaginations and speculations, much as an oil painter puts his final touches of transparent colour on a picture upon which he, and, perhaps his master before him, have been working unceasingly for many years on end

* Hildegard Fath Rudolf Hess's secretary, said that the Fuehrer's deputy had told her an astrologer had named him as the man to bring about peace between Germany and Britain (Dr Douglas M. Kelley, Chief Psychiatrist at the Nuremberg trials to Howard Whitman, of *The Sunday Express* Sept 1st, 1946)

Also, new thoughts do not enter the minds of all individuals simultaneously, but with a time lag of various length. The propagation and the popularising of new achievements in the sphere of abstract reasoning take a long time, and never reach beyond a limited circle of individuals, the vast majority being almost impervious to certain refinements of mathematical argument such as those upon which the most recent cosmological systems are based. The few dozens of living men capable of really understanding the General Theory of Relativity—which cannot be popularised by any means known to us—the few hundreds who could grasp at least the principles of the now obsolete Special Relativity Theory, the few thousands who have mastered the higher mathematics necessary for understanding Prof. Milne's Kinematic Cosmology are the contemporaries and have to consort in a friendly and helpful way with men and women who cannot and will not even try to understand the intricacies of elementary geometry, with people who cannot be made to comprehend as much of physics and chemistry, as we try to teach in our secondary schools. The scholar steeped in classical culture, conversant with several old Oriental languages and well read in all the literatures which have influenced our own outlook upon this world, dwells in the same street, and sometimes in the same block of flats, with otherwise quite efficient and congenial neighbours knowing less than a thousand words of their own English mother tongue and never reading anything but the "tabloid" newspapers and mass-produced detective novels.

The "savage" and the "primitive" of the so-called "pre-logical," more exactly the pre-critical age of *homo faber* and *homo sapiens*, unable to distinguish facts from the figments of his imagination, is always with us. What is more important still, he is always within us.

Under the thin veneer of clear, unbiassed, dispassionate rational thought on the surface of the modern scientist's mind persists the dogmatism of the seventeenth century theologian, the persecution madness of the witch burner and heresy hunter, the scholasticism of the medieval cleric, the casuistry of the Jewish talmudist, the formalistic rigorism of the Roman lawyer, the rhetorical sophistry of the Greek speculative philosopher, the fatalistic "determinism" of the Chaldean worshipper of Time and Space, the moralising puritanism of the Zoroastrian dualist, and even the naïve belief in the reality of "active forces" moving "passive matter," in "causes and effects," in the

"spontaneous generation of life," in "creation out of nothing," in the "autonomous will-power" of "free-agents," in "influences acting from a distance" and other similar notions inherited from the cave-dwelling witch-doctor of the stone-age.

This is the main reason why the French historian of Greek astrology, Bouché-Leclercq, was right in concluding the preface to his monumental book on Greek astrology with the words: "We do not waste our time in studying upon what others have wasted theirs." We cannot, indeed, shirk our duty of explaining to ourselves, as well as to every *bona fide* inquirer, how, where and when the various mystic or "occult," more or less irrational views of the world, still cherished by the less critical and sceptical minds, originated. As Aristotle said: "We must not only state the truth, but also the cause of error."

This imperative applies with particular force to the historical investigation of the evolution of that complicated, allegedly logical system of thought which presents itself to the student of ancient, medieval and modern astrology. It would be difficult, if not impossible, to find another body of doctrines which has so deeply influenced—in spite of all the criticisms levelled at all times against its more manifest weaknesses—the behaviour of so many leading individuals of all ages and all countries, which has imprinted such ineradicable traces on the English and all the Romance languages that we are to this day compelled to use an astrological term every time we want to "con-sider" what we are going to do about this or that problem—"con-sideration" being nothing but the act of contrasting the influence of the various stars (*sidera*) on the "contemplated" decision, *contemplation* itself meaning originally the construction of a diagram quartering the sky—called *templum* by the old Etruscan augurs—and designed to facilitate the systematic interpretation of the portents observed by the skywatcher. Whether we deplore in the high-flown language of tragedy the most recent world "dis-aster" or describe in low-brow East-end slang a mere "she-mozzle" or "shlemozzle" (Yiddish *schlimm massel* from Hebrew *mazzal*, *manzal* "constellations"), we cannot avoid paying an unwilling tribute to this age-old superstition which was, and still is to this day, so unscrupulously exploited not only by individual charlatans—all more or less self-deceived deceivers—but also by a large section of the popular Press cynically pandering to this trade and thriving upon it, as it battens upon the ill-begotten gains from its participation in the patent-

medicine racket and in other abuses of this kind, rampant in a world which is deceived because it wants to be deceived

But there is also another reason why the welter of astrological literature—cuneiform tablets of Assyria and Babylonia, Elam and the Hittite Empire, hieroglyphic inscriptions of Egypt, Greek papyri, Latin and Arabic manuscripts and books—deserves the scholar's as well as the general reader's lively interest. In singling out for our closer attention from the long history of religion and science—which must inevitably be to a large extent the history of human errors—the particular illusions of the astrologer, humanity pays a debt of undying gratitude to the assiduous “star gazers” and “mathematicians” of antiquity, who, through their patient observations and ingenious interpretations of celestial phenomena, laid the solid foundations not only of modern astronomy, but also of the whole of our modern scientific cosmology. It is undeniable that nothing but the firm belief in the immediate practical importance of their diligent watches of the heavenly movements could have evoked the enormous expenditure of energy which has been devoted to the study of the celestial sphere through all the centuries, from the time when the wise men of the East first sighted the stars through the slit of their palm staves from the tops of the terraced temple towers of Nippur, Babylon and Nineveh to our own days, when the most recent giant telescope is just being trained upon the most distant, rapidly receding nebulae of this mysterious universe on the summit of Mount Palomar in the Far West of a Brave New World.

XXXIII

ILLUSTRATIONS EXPLAINED

I PLATES

FRONTISPIECE PLANETARY DIVINITIES as they were imagined in the 16th century. Reproduced after Johannes Schœner's *Opera Mathematica*, Norimbergæ MDXXXVIII, *Pars secunda* pp XXXIV and XXXV

Upper figure. The circle surrounding the seven figures—like the felly of a wheel (above, p 28 f)—shows the twelve zodiacal

signs The figures of the planetary divinities are inserted like the seven spokes of a wheel between the felly and the hub, the latter being represented as the earth surrounded by the clouds enveloping the atmosphere The figure on top with the mirror reflecting light is *Sol*, the sun god The mirror symbolises the Pythagorean theory that the sun is merely reflecting the light of the (invisible) central figure around which it rotates (see above, p 234) On the right side of *Sol* is Mercury with his *caduceus*, the winged herald's staff entwined with two snakes interpreted as the serpentine orbits of Sun and Moon (see pl xvi c), and with his winged hat Below Mercury follows Venus holding the arrow of Cupid and a wounded and burning heart Below Venus follows Luna with the moon sickle and the hunting spear of Diana

The square figure at the bottom, supposed to illustrate "the conjunction of Sun and Saturn" shows on top the zodiacal sign of *Leo*, divided in thirty degrees of the ecliptic Below it on the left *Sol* is shown as a king holding his sceptre and an orb crowned with the cross, behind him *Leo*, the "house" of *Sol* (fig 31) On the right side we see Saturn with his sickle, holding the baby he is supposed to devour (the myth of *Kronos Saturnus* castrating *Uranos* with a sickle and devouring his children is derived from Hesiod's *Theogony*, 7th century B C) Behind Saturn the artist shows the planets "house," the sign *Aquarius*, the "man with the watering pot" These divinities are seen encountering each other immediately above and amidst the clouds The figure on the right is supposed to illustrate the rule that a planet approaching the Sun or being approached by the Sun is considered to be "deprived of part of his own light" while a planet receding from the Sun or from which the Sun recedes is considered to "increase his own light" (a curious theory considering that the planets receive all the light they reflect from the Sun!) *Sol* with his mirror is seen approaching or receding from Mars armed with shield and sword, Jupiter with his royal sceptre and the child devouring Saturn

PLATE I Portraits of the Newspaper Astrologers Miss Adrienne Arden, Gipsy Petulengro, Mr Edward Lyndoe and Mr R H Naylor, Mrs Sudbury Hurren and Mr Alexander Rupert, explaining the horoscope of Jesus Christ

Photographs from *Picture Post*, September 6th, 1941, courtesy of the Editor and the Proprietor of this illustrated weekly, of the Editors of *News of the World* and *Sunday Chronicle*

PLATE II Astrologer Louis de Wohl works out Mussolini's horoscope foretelling the Duce's death by violence

Photographs from *Picture Post*, courtesy of its Editor and Proprietor and of *Pictorial Press*

PLATE III THE NINE CONCENTRIC SPHERES OF HEAVEN according to Petrus Apianus, *Astromicon Cæsareum* printed in Ingolstadt on his own presses for Emperor Charles V in 1540

In the centre is the earth surrounded by the atmosphere with the clouds, then follows the sublunar sphere apparently filled with flames supposed to be the origin of "fire falling from heaven" in the shape of lightning, fireballs, etc. Above this there are the spheres of the Moon, Mercury, Venus, Sun, Mars, Jupiter Saturn, then the eighth sphere of the fixed stars. Then the "ninth heaven," *cælum crystallinum* supposed to be of ice, with the "twelve signs" of the movable ecliptic. The corresponding twelve zodiacal signs of the "fixed ecliptic" are shown in the "tenth heaven" identified with Aristotle's "*primum mobile*" imparting movement from outside to all the others. Outside of it is the "*Cælum Empyreum habitaculum Dei et omnium electorum*" "the heavenly abode of God and all the chosen ones." Between the eighth and the tenth sphere Apianus shows two small cog wheels intended by the Arabic astrologer Tebit ibn Qurra (831-901) who invented this expedient to explain the mechanism of the alleged oscillatory—not constantly precessional—movement of the tropical points with reference to the "fixed" stars (p. 90), in other words the supposed secular movement between the "fixed" and the "movable ecliptic" (below, p. 268 to pl. vi b).

This cog wheel—with cogs numbered 2, 3, 4, 5, 6, 7, numbers 1 and 8 being hidden by the hand holding the paper—is seen on an astrological chart concerning the nativity of the Saviour Child, held by the oldest of Giorgione's "Three Philosophers" in the Vienna Gallery, showing the three Magi from the East watching on the summit of the "Victory Mountain" (*mons victoralis*) near "Sodola"—identified by Prof. Herzfeld with the Koh-i-Khawâgâ near Lake Hamûn in the Seistan, S.E. of Afghanistan—for the heliacal rising of the star announcing the birth of the Messiah according to the "Prophecy of Seth" preserved in the "*Opus Imperfectum in Evangelium Matthæi*" See below, p. 271 f. the explanation to pl. xi and the description of fig. 1.

PLATE IV THE HOUSES OF HEAVEN Woodcut by Erhard Schœn in Reymann's *Natürliches Kalender* of 1515 reprod after Aby Warburg, *Gesammelte Schriften*, vol II, pl LXXV, fig 130 In the four corners the four winds, just as in the ancient Planisphere Bianchini, pl ix Above the "immovable" sphere divided into "Twelve Houses" God Father—the "Prime Mover" of Aristotle—is seen to stand between four angels, over his right hand the dove of the Holy Ghost, in his left hand he holds the sphere of the Universe This is how the astrologer acknowledges the supremacy of divine Providence over astral fate In the centre is the circle symbolising the inhabited earth, the seven sectors of the circle surrounding the central disk show the figures of the seven planetary gods Mars with the sword (left) and Saturn with the scythe (right), below Mars, the Sun, Venus, the Moon (with the bow and arrow of Diana) Below Saturn, Jupiter and Mercury These planets are arranged with reference to the twelve zodiacal signs surrounding them, according to their positions as shown in the calendar for this year In the outermost circle are the "houses" Nr 1 (*Vita*)—just below the *hōroskopos* or "Ascendent" in the East shows a woman in childbed Nr 2—just below "*Lucrum*"—"gainful occupation" shows a merchant at his desk counting money Nr 3, two standing figures are "*Amici, Fratres*"—"Friends," "Brothers" Nr 4 *Patrimonium, Parentes* represented by a bit of land being ploughed Nr 5 two children, *ie, Filii*—"Sons" Nr 6 *Vitium, Valetudo*—a sick man in bed, the wife and the doctor at the lower end Nr 7 *Nuptiæ*—"Wedding"—the priest marrying a couple Nr 8 *Mors* (Death), a scything skeleton Nr 9 *Religio*, a priest hearing confession and a mitred bishop or abbot Nr 10 *Honores*—a king enthroned Nr 11 *Bonus genius* represented by Fortune's Wheel Nr 12 *Carcer, Inimici* (Prison, Enemies) represented by a man in the stocks

We reproduce this engraving because it clearly shows the demonologic, by no means abstract and mathematical character of these beliefs, at least in the popular imagination of the time when they were most generally held by the learned as well as the half educated

PLATE V THE PLANISPHERE OF TIMOCHARES (c 300 B C) From *Codex Vaticanus Græcus* 1087, after Franz Boll, *Sphæra*, Leipzig (Teubner) 1904, pl 1

The manuscript which contains this planisphere—discovered

by Albert Rehm, first published in a natural size collotype by Boll *l c*—contains a summary of the so-called “*Catasterismata*,” an illustrated Greek schoolbook combining a commentary to Aratus with an old catalogue of constellations, very plausibly supposed to be based on Timochares’ catalogue of fixed stars by Ernst Maass, *Commentariorum in Aratum Reliquæ*, p 394. The title “*Astrothesai*” which it bears in a Codex Laurentianus may originally have belonged to Timochares’ catalogue, often quoted by Hipparchus (see Thiele, *Antike Himmelsbilder* p 154 ff) Timochares was a contemporary of Ptolemy I Soter (323-308 B C) See Kroll in Pauly-Wissowa’s *Realenzyklop*, vol VI, col 1,259 lines 1-5

The pole star is here still shown in *Alpha Draconis*—as it was in the third millennium B C—the prime meridian runs through *Sirius* in *Canis maior*—as in the old Assyrian quartering of the sky illustrated by our fig 5 which corresponds exactly with the disposition of this planisphere The Greeks who did not know enough of the wanderings of the pole of the celestial equator to reconstruct this position of the celestial vault, must have copied their star-maps mechanically from obsolete planispheres ultimately derived from texts such as the uranography of Assur (fig 10) provided with illustrations such as they are found on the tablets of Warka (figs 20 and 21) and on the Babylonian boundary stones of the Cassite period (1600-1100 B C) (figs 26 27) Since we know that Babylonian star-catalogues existed in the Hittite archives and can legitimately be expected to have been used by the star-clerks of the Lydian kings of Sardes too, the Greek colonists of Cyprus and Asia Minor can very well have come to know them there

PLATE VI (a) THE PLANISPHERE (WROUGHT IN RED SANDSTONE, NOW AT THE LOUVRE PARIS FROM THE “STAR CHAMBER” OF THE TEMPLE OF DENDERA) (ancient Tentyra) built under the rule of Emperor Tiberius First published by Denon, *Voyage dans la Basse et la Haute Egypte pendant les campagnes du général Bonaparte*, London, 1802, pl 40, 4° It preserves the old Assyrian orientation by means of a great circle running through *Spica*—the Corn Ear held by the Virgin standing behind the Lion—and *Ursæ maioris*, here marked by the thin end of the “Bull’s Leg”—the constellation *Kenl*—“Haunch” mentioned in the Hebrew Bible Note the four goddesses holding the planisphere and supposed to turn it round in their hands They are the goddesses

of the four columns of the sky. The naked woman on the left side standing on her toes and outstretched hands is the goddess *Nut* supposed to form the arch of heaven stretched out over the male god of the earth lying on his back and looking up at her (see p. 249). The hieroglyphic inscriptions on the wall of the sanctuary published by Duemichen say "the ceiling over it is decorated all over with the constellations and decan stars as it is fitting for the sanctuary containing the souls of the stars

by artists of the first rank in their hours, beautified with gold, made brilliant in blue colour by the master whose fingers are deft. Whosoever enters it, walks into it as if he entered heaven."

PLATE VI (b) ASTROLOGICAL DICING BOARD Marble slab known as the *Tabula Bianchini*, found in fragments on the Aventine Hill of Rome in A.D. 1705 and sent by Bianchini to the *Académie des Sciences* of Paris. A similar fragment, now lost, is known through an old drawing of Peiresc engraved for Montfaucon, republished by F. Boll, *Sphaera* p. 303, W. Gundel, *Dekane* pl. xvii. Reproduced after Gundel *op. cit.* pl. xvi. The practical use of this marble slab has been recognised by A. Warburg and established in detail by W. Gundel in *Bezold*. Boll-Gundel, *Stern Glaube und Stern Deutung* 3rd ed. Leipzig (Teubner) 1926 pp. 191 ff. It shows in the centre the constellation *Draco* with *Ursa maior* and *minor*, the celestial pole obviously located in *Alpha Draconis*. The first ring surrounding the central disk shows the twelve animals of the *Dodekahōrōn Chaldaïke*. The next two rings show the signs of the zodiac twice—meaning evidently the fixed and the movable ecliptic distinguished by Ptolemy of Alexandria (above, p. 112), coinciding accurately, as they were at the instant of the Creation. This dates the monument, the style of which has been recognised as belonging to the 2nd century A.D. even by those who did not understand this feature. Then follows a ring showing the standing figures of the thirty-six decan gods, the Græco-Egyptian name of each one inscribed below the figure. The foremost among those which survive, carries a double axe. This divinity with the characteristic attribute has travelled far east and is still found among the Japanese decan demons (Gundel, *op. cit.* pls. xiv f). The outermost ring shows the "faces" (*prosopa*, *facies*) of the seven planetary gods repeated again and again, in the *septizonium* order, each one co-ordinated with one of the decans (above, p. 209). In the corners of the tablet are the

winged heads of the four main winds, co-ordinated with the constellations in a way known to us from a cuneiform tablet discussed by P V Neugebauer and Ernst F Weidner, *Archiv f Orientalforschung*, vol VII, p 269, col b (pl II of the "Plough Star" Catalogue)

PLATE VII EGYPTIAN "TEN-DAY STARS" (DECANS) painted on the inside of a coffin lid found in Asyut (6th Heracleopolitan Dynasty, 3rd millenium B C) After Wilhelm Gundel, *Dehane und Dekansternbilder, Studien der Bibliothek Warburg* Nr XIX, Hamburg Gluckstadt 1936, pl 1 The large figures at the beginning of the series show the sky goddess *Nut* supporting the firmament on her outstretched hands, on her right side the "Bull's Haunch" marked with the seven stars of *Ursa Major* On the right side the figure of a god holding a sceptre, over his head the hieroglyph meaning "the toes" is Orion—in Egyptian *Sahw* "the tip-toeing"—the goddess holding a sceptre with the hieroglyphic sign of a thorn (*spd*)—a primitive arrow point—on her head is the goddess *Sopdet* called *Sothis* by the Greeks, seen in the star now known as *Sirius*

PLATE VIII EGYPTIAN DECAN-STARS PAINTED ON THE CEILING OF THE TOMB OF SENMUT, chief chamberlain of Queen Hatshepsowet (16th century B C) in Deir el Bahri (after Gundel, *Dehane*, pl m)

The three stars above the figure of Orion with his staff standing in his barge on his left is *Sothis*, our *Sirius* The oval figure with one star inside and three five-ray stars around it is *Corona australis*, still represented in exactly the same shape in King Alfonso's *Libros del Saber de Astronomia*, also on the Arabic celestial globe, fig 8, on the top, on the right side of *Ara* and the "Sting of *Scorpio*" Then follows the Egyptian constellation *Sro*, the Ram—not our *Aries*, but the Babylonian "Bell wether" (LU LIMU), our *Andromeda*—on the right side the constellation *Argo* or *Navis*, the Ship, the various parts of which were used as ten day stars In the extreme column on the left, are the names of the five minor planets as regents of the five intercalated "epagomenal" days equating the 36 decades of the "round" business year of 360 days with the solar year of about 365 days

PLATE IX THE GRÆCO EGYPTIAN AND THE JAPANESE TWELVE-HOUR STAR SYMBOLS (a)

Græco-Egyptian marble slab discovered by M. Daressy showing in the outer ring the twelve signs of the zodiac, in the inner ring the twelve hour star animals, in the centre the busts of the Sun and the Moon gods

(b) Gouache painting on paper in the Munich Ethnographical Museum (after Boll Bezold Gundel, *Stern Glaube und Sterndeutung*, 3rd ed., Leipzig, 1926, pl. xiv)

PLATE A THE ARTISAN (BABYLONIAN NANGARU) AND THE CONSTELLATION OF THE CRAB in the Zodiac of the main porch of the Cathedral *Notre Dame de Paris* Reprod. after Charles Dupuis, *Origines de tous les Cultes*, Paris 1792, pl. xviii (the Crab in the upper right hand corner)

Since this engraving was made the original sculptures were replaced by Viollet le Duc's restorations, the subjects being frequently misunderstood, as the reader can see in the photographic reproductions given by Marc Aubert, *Notre Dame de Paris, Architecture et Sculpture* Paris s.a. (1929). The Virgin with the Christ as a child was seen at that time, as we gather from the Pseudo-Ovidian poem *De Vetula* forged by the Chancellor of the Sorbonne Richard de Fournival (c. 1260 A.D.) in the sign *Virgo* often represented as carrying a child (see p. 99) on her arm. She treads on the Dragon—*Draco* here representing the Serpent in Paradise—often shown in ancient star maps, e.g., *Cod. Vat. Gr.* 1087, as the Dragon Ladon guarding the tree bearing the apples of the Hesperides, here symbolising the Tree of Knowledge. Below it the figure of Winter warming his hands at the fire, on the left of it the month January showing the king of the *Saturnalia* receiving *strena*, i.e., the customary gifts of old coins. Still further left *Aquarius* and Isis launching a ship (*Isidis navigium*, known to have been celebrated in Paris). The ship is *Navis* seen just opposite *Aquarius* (fig. 7). Over this figure we see *Pisces*. On the right side of *Pisces* the Roman consul offering the *Februaria* sacrifice and the peasant gathering dry sticks. Above *Pisces* the sign *Aries* and the personified month of March pruning fruit trees. Above *Aries* the sign *Taurus*, the month April holding the flowers of the *Floralia* festival, at his feet corn is sprouting. Above the Bull the Twins, beside them May starting falconry and holding a young May tree branch in his right hand, on his right a figure "casting a clout". Above *Gemini*—by mistake—not *Cancer* but *Leo* with the month June holding a sickle and carrying a load of hay. On the right side of *Virgo* the month of July honing a scythe, on his right

manuscript this book is attributed to Philipp de Thoiry), by the Franciscan scholar Roger Bacon, the *Doctor Mirabilis* of Oxford (c 1214-1294), by the Chancellor of Paris, Richard de Fournival (1260 AD) (in a poem he passed off as a product of Ovid called "*De Vetula*") and by Bishop Robert Grosseteste (c 1175-1253)

"*ascendit in prima facie illius, scilicet Virginis, puella quam vocant Celchuis dorastal, & est Virgo pulchra atque honesta et munda prolixis capillis et pulchra facie, habens in manu sua duas spicas, et ipsa sedet super sedem stratam et nutrit puerum, dans ei ad comedendum in loco qui vocatur Abrie*" (corrupt, read *atrio*) "*Et vocant Christum puerum eius quædam gens Jesum cuius interpretatio est Arabice Eice (= 'Isu = Jesus)*"

"There rises in the first face" (*i.e.*, planetary decan of the sign) "a girl whom they call the pure virgin" (the Persian name is corrupt in the Latin MSS) "and she is a beautiful, honest and clean maiden with rich hair and a fair face holding in her hand two corn ears and she sits on a carpet covered seat and she feeds a baby boy giving him soup to eat in a place called *atrium*" (corrupt in the MSS) "And a certain tribe" (Abu Ma'zar calls the Nazaræans, *i.e.*, Christians a "tribe") "call this boy Jesus Christ, rendered in Arabic '*Isu*' " The *Speculum Astronomicum* goes on "And we know already that under this rising sign—namely *Virgo*—the Lord Jesus Christ was born when the movement of the eight sphere (*i.e.*, the precession) was eight degrees 37 minutes and two seconds according to the most certain calculation "

PLATE XII ADONIS RISING FROM AND DESCENDING INTO THE CELESTIAL UNDERWORLD IN THE SCALES OF *LIBRA*, *i.e.*, AT THE VERNAL AND THE AUTUMNAL EQUINOX THE GODDESS APHRODITE REJOICING AND MOURNING RESPECTIVELY

Marble head piece of the sacred bed of the goddess for the celebration of the defloration rite in the sanctuary of Aphrodite on Mount Eryx in Sicily Found in Rome the city to which it seems to have been brought by the notorious governor of Sicily Verres in the gardens of Villa Ludovisi, now in Mrs Gardener's collection, Museum of Fine Arts, Boston, Mass

PLATE XIII (a) THE "SWALLOW FISH" (SINUNTU)

the Crab, below it 'the Carpenter,' or Artisan (*faber*, Babylonian *nangaru*) with the month August stacking corn sheaves, below the man holding the balance *Libra* and September treading grapes in the wine vat. Below *Libra* the sign of *Scorpio* with October sowing seed, below it *Sagittarius* the centaur and November hunting with hounds, finally *Capreolus* with December killing the pig. The remaining figures are the Seven Ages of Man.

PLATE XI THE VIRGIN MARY ON THE THRONE OF SOLOMON guarded by twelve lions on its steps, between Albumazar and Virgil, the pagan and the Moslem believed to have recorded astrological forecasts of the impending birth of the Messianic Child.

Westfalian 14th century painting in the Kaiser Friedrich Museum, Berlin. Reproduced after Kurth Rathe, *Mitteil. d. Gesellschaft f. vörmittelalt. Kunst*, Vienna 1922 Nr. 1 p. 22.

The scroll in the hands of the poet Virgil is inscribed with the words of the famous verse in the Fourth Eclogue believed to herald the birth of Christ.

"Iam nova progenies cælo dimittitur alto"

"already a new scion is being sent down from high heaven"

These melodious lines refer actually to the impending birth of Marc Antony's and Cleopatra's son Alexander Helios—the new born Sungod and reborn Alexander the Great—"foretold" by the Cumæan Sibyl whose poems were circulated by Cleopatra's publicity agents, notably the Egyptian astrologer she had attached to Antony's headquarters. Virgil's poem is a New Year's congratulation addressed to Antony's agent in Rome Pollio under whose just starting consulate the expected saviour king and "Prince of Peace," heir to the Roman and the Ptolemæan empires as well as to the Persian realm Antony hoped to conquer, was expected to be born by Cleopatra identified with the goddess Isis, the *Virgo Cælestis*, the Egyptian sky goddess *Nut* (pl. vi) believed to give birth to the Sun on the 25th of December.

The scroll in the hands of the Arabic astrologer Abu Ma'zar—here called *Albumazar*—is inscribed with the words quoted from the Latin version of his *Introductorium Maius*, quoted from an *Opus imaginum*, an astrological picture book attributed to Ptolemy, by the great Dominican Albertus Magnus (1193-1280 A.D.) in his *Speculum Astronomicum* (ch. v, in a Bodleian

manuscript this book is attributed to Philipp de Thoiry), by the Franciscan scholar Roger Bacon, the *Doctor Mirabilis* of Oxford (c 1214-1294), by the Chancellor of Paris, Richard de Fournival (1260 AD) (in a poem he passed off as a product of Ovid called "*De Vetula*") and by Bishop Robert Grosseteste (c 1175-1253)

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Marble head-piece of the sacred bed of the goddess for the celebration of the defloration rite in the sanctuary of Aphrodite on Mount Eryx in Sicily Found in Rome the city to which it seems to have been brought by the notorious governor of Sicily Verres in the gardens of Villa Ludovisi, now in Mrs Gardener's collection, Museum of Fine Arts, Boston, Mass

PLATE XIII (a) THE "SWALLOW FISH" (SINUNTU)

Reproduced after Schjellerup's edition, *Description des étoiles fixes d'Abou'l Houssein 'Abd al Rahman el Soufi*, Petersburg, 1874

PLATE XIV PALOLO WORM AND LAND CRAB

Reprod by courtesy of Mr W P Pycraft, F Z S, and *The Illustrated London News* from this periodical (June 15th, 1940, p 821)

PLATE XV Left side **THE FLOOD DROWNING THE WORLD IN THE LAST DAYS** caused through a Conjunction of all the Planets in one of the Fishes Title page to Leonhard Reymanns *Practica* for 1524 (after A Warburg, *Heidnisch-antike Weissagung*, p 30, fig 13)

Right side **EFFECTS OF THE PLANETARY CONJUNCTION OF 1521 A D** Title page to Johann Carion, *Prognosticatio und Erklerung der grossen Wesserung 1521* after Warburg *ibid*, pl 1

PLATE XVI (a) THE SUMERIAN UB IMIN="SEVEN REGIONS," CALLED HEPTAMYCHOS BY THE EARLY GREEK PHILOSOPHER PHERECYDES OF SYROS

Babylonian Tablet from the Khabaza Collection, now in the Philadelphia University Museum Reproduced after Hilprecht, *Exploration in Bible Lands*, p 530

The pentagram is found as the sign for *UB=tubuqati* in tablets of Djemdet Nasr, Fara, inscriptions of Sargon I of Akkad and of Gudea of Lagash (3rd millenium B C) See Allotte de la Fuye, *Le pentagramme pythagoricien dans le syllabaire cuneiforme, Babyloniaca* xiv 1934, p 3 and p 18, fig 5

(b) **FOUR TRINES IN A CIRCLE** Diagram on a Neo-Babylonian tablet of the Seleucide period found in Warka, the ancient Uruk, the Biblical Erech First description, without reproduction, by Heinrich Zimmern, *Zeitschrift f Assyriologie*, vol 32, p 71 Autograph copy in Thureau Dangin's *Tablettes d'Uruk, Musée du Louvre, Dept Antiqu*, tome VI Paris (Geuthner) pl XLVI It describes phases of the moon from an unknown date to the year 130 of the Seleucide era (121 B C)

The Babylonian astrologers connected the four principal kingdoms of the world—*Gutium* or *Subartu* in the North, *Elam* in the East, *Amurru*—the Biblical Amorite country—in the West and their own country *Accad*—with three months each, during which the sun stood in the respective parts of the zodiac. An

eclipse of the full moon, standing opposite the sun in the months March, July, November was considered a portent for Accad. If it happened in April, August, December, it threatened Elam, if it was seen in May, September, January it was a menace for Amurru. If it occurred in June, October, February it was thought to be a warning for Subartu Gutium. Connecting the zodiacal signs corresponding to these months with lines, the diagram shown on this cuneiform tablet is obtained. It proves that the geographical or "chorographic" interpretation of celestial signs ("mundane" astrology) and the geometry of the aspects is of Babylonian origin. The Hebrew "*Blessings of Jacob*" (Gen. XLIX), written at the time of king Solomon, assign a constellation to each one of the twelve tribes of Israel. (See above, p. 92.) The last survival of this idea are the stars in the flag of the U.S.A., one for each of the States.

(c) **TORSO OF A MITHRÆIC STATUE OF CHRONOS ZRVAN**, the Græco-Irano-Babylonian divinity of personified Time and Space, represented by the revolving sky. This divinity is already mentioned at the beginning of the great cuneiform list of gods beginning *ilu Anu ilu Antum* "sky god"—sky goddess—*ī ē*, Heaven in its male aspect as the (circular) flow of Time (*ilu Duru*) and in its female aspect as the womb (Plato *metra* and *hypodochē*) of Space. The body of this bisexual divinity, believed to generate and to destroy everything is represented as encircled by the great serpent (see fig. 30)—the spiral orbit of the sun—winding its way between the signs of the zodiac. See Franz Cumont, *Textes et Monuments du Culte de Mithra*, Bruxelles 1896, vol. II, p. 403, fig. 325, Robert Eisler, *Weltenmantel u. Himmelszelt*, Munich 1910, vol. II, p. 439, fig. 54.

II FIGURES IN THE TEXT

FIG. 1, p. 22 THE NATIVITY OF JESUS CHRIST
Woodcut designed in the Nuremberg workshop of Michael Wolgemut, Albrecht Dürer's master, as the thirtieth illustration in the "*Treasure Chest*" (*Schatzbehälter*), by Friar Stephan—(a Franciscan monk of Nuremberg). Reproduced after the copy from the Douce Collection, Nr. 262 in Bodley's Library, Oxford.

Outside the eight spheres of the fixed stars marked with the sign of the zodiac the hand of God, the "prime mover" is shown. Each of the twelve sectors is divided into three parts,

the so-called decans (ten day periods, see p 83) Inside the eighth sphere is the seventh of Saturn shown in the first decan of *Gemini* Then follows the sixth, with *Jupiter* in the second decan of *Libra*, the fifth with *Mars* in the first decan of *Aries*, then the fourth with the Sun in the middle decan of *Capricornus*, *i e*, at the winter solstice, then the third with *Venus* in the first decan of *Aquarius*, then the second with Mercury next to the Sun in the second decan of *Capricornus*, finally the Moon in the first decan of *Taurus* Then follows the "sublunar sphere," then the atmosphere with the clouds surrounding the earth upon which the new born child is laid, surrounded by a halo of rays as if the Christ Himself were a star Before the child the Madonna and the midwife Salome are seen to kneel in adoration The text says that the diagram shows "how Christ submitted voluntarily to the laws of time and nature, not according to the superstition of the Priscillianists and mathematicians, but in the common and true manner" "The position of the seven planets and twelve signs is intentionally drawn according to the opinion and calculation of some star gazers"

Since it is known that Regiomontanus (fig 2) calculated a horoscope of Jesus Christ in 1454 and that he lived with his disciple and friend, the astronomer Bernhard Walther in Nuremberg from 1471-1476 and employed wood cutters from Wolgemut's workshop, the words allude probably to him and his school In Regiomontanus' manuscript on the subject the figure is missing

A still earlier horoscope of the Christ is in the *Liber Anaglyphorum* of 1456, by the Dominican Father Nicholas of Hungary, where it is ascribed to Albertus Magnus, a Dominican and archbishop of Ratisbon (1260) and before that, professor at the University of Paris See above, p 279 f, the explanation of plates x and xi

More modern horoscopes of Jesus Christ and also of the "first Adam" can be found in Mr Benjamin F Loomis' ("Graduate of the American Institute of Phrenology") book *Science and Religion*, Melbourne and London, 1886, pp 25 and 131 (figs 7 and 8) This author believes that Jesus was born exactly at midnight on December 25th of the year 1 B C—ignoring the well known fact that the 25th of December is nothing but the Egyptian "Birthday of the Sun," the *natalis dei invicti Mithrae* of the Persians, which became an official holyday in the Roman Empire only about A D 273 under Emperor Aurelian, while the arbitrary identification of the year of the birth of Jesus Christ

with the year 1 B C—four years after the death of Herod the Great, and therefore in manifest contradiction to the gospel story—is due to Dionysius Exiguus, a Scythian of the sixth century A D, living under the emperors Justin and Justinian. The “Nativity” of Jesus Christ was also calculated c 1700 A D by the Rev Dr John Butler, chaplain of James Duke of Ormond, rector of Lichborough in the diocese of Lichfield and engraved as pl Nr 45 in E Sibly, M D, F R H S, *A new and complete Illustration of the Occult Sciences in the Art of Foretelling Events and Contingencies by the Aspects, Positions and Influences of the Heavenly Bodies*, London, 1801, pp 892/3, *ibid* p 910, ‘Scheme of the Heavens at the Apprehension and Crucifixion of Christ’

FIG 2, p 29 Title page of Regiomontanus *Epytoma Ptolemæi* printed Venice 1496 by Johannes Hamann called Hertzog of Landau. Ptolemy (PTOLEMEUS), erroneously believed to be one of the Egyptian kings of the Ptolemean dynasty, is shown with a crown. Opposite is seated IOHANES DE MONTER(EGIO) (1436 1476). The walled town at the foot of the hill in the background is meant to be Königspurg in Franconia (*Mons Regius*). On the table is the armillary sphere described by Ptolemy, reconstructed by Regiomontanus. The black star on the top is meant for *Polans*, opposite at the South pole of the Equator (*polus mundi antarcticus*) a similar star is erroneously supposed to stand. In the right hand top-corner the words *Polus zodiaci*. The zodiac is shown as an oblique belt with the twelve signs. The black ball in the centre represents the earth. The equator is inscribed *equinoctialis*. The polar circle (*circulus arcticus*) and the tropics of Cancer and Capricornus are also shown in this model of the Ptolemean world system. The three zones above the tropic of Capricornus correspond roughly to the three “felles” or “wheels” of the Babylonian astrologers.

FIG 3, p 32 THE WHEEL OF FORTUNE, a lottery wheel circulating the seven planets around the earth in the centre by means of a system of hoops combined into a sort of armillary sphere, turned round by the goddess of Fortune.

Frontispiece to Wenceslas of Budovice, *Judicium Lipsiense* for the year of 1490, mainly for use in Prag, printed without date or indication of place by Creussner, Nurenberg (Hain 6867). The nearest modern analogy to the world model of Anaximander of Milet

FIG 4, p 36 THE ASTROLOGICAL DIVISION OF THE SKY INTO FOUR QUARTERS (*CARDINES*) *Horoscopus* is also called the "ascendent," *Occasus* the "descendent," MC (*medium cælum*) is known as "Midheaven," IMC (*imum medium cælum*) as "Lower Midheaven" Below it is shown the further halving of these quarters, yielding the *octatropos* (the term *octotopos* used by Bouche-Leclercq, from whose book our figure is borrowed, has been proved incorrect by the discovery of the papyrus quoted in the text)

Equally so the scheme dividing the "ninth, immovable sphere" into twelve parts is correctly called *Dodekatropos*. The "patronage" over some of these parts attributed—the god Hermes alone knows why!—to six of the seven planets (Mars being homeless in this scheme of things) is shown above the *Dodekatropos*

FIG 5, p 41 DIAGRAM BY GUNTHER MARTINY showing the sky of the third millenium B C quartered by two great circles running through the North pole of the equator, then in *Alpha Draconis*—the one through *Spica*, *Eta Ursæ maioris*, the last star at the end of the Waggon's beam, and through *Beta Crucis*, *Beta Ursæ maioris*—one of the stars now known as "the pointers"—also through *Alpha Cassiopeiæ*, the most luminous star in the characteristic W figure, the other through *Alpha Ursæ maioris*—the other "pointer"—through *Sinus* and the next most luminous star of *Canis maior*. This cross halved at that time almost exactly the quarterings cut out by the East-West circle running through the equinoctial points and the North South circle crossing the solstitial points. This striking lay out is the basis of the original division of the sky in eight sectors (*Octatropos*, fig 4) Reproduced after Albert Schott, *Zeitschrift d Deutsch Morgenland Gesellschaft*, vol 88 (NF 13), p 323

FIG 6, p 46 ARABIC CELESTIAL GLOBE WITH CUFIC INSCRIPTIONS in possession of the Royal Asiatic Society, London, with the southern pole of the ecliptic in the centre, the southern pole of the equator above it Southern Hemisphere (from top to the left downwards) *Corona australis* (see pl VII, tomb of Senmut), *Ara* Sting of *Scorpion*, *Scorpio*, *Lupus*, *Centaurus*, *Hydra*, *Corvus*, *Crater*, *Navis*, *Canis maior*, *Procyon*, *Lepus*, *Orion*, *Eridanus*, *Cetus*, *Piscis SW*, *Vinculum*, *Capricornus*, *Sagittarius* Reproduced from the lithographs in Dorn's monograph on this instrument

FIGS 7 and 8, p 50 THE GREEK SKY MAP, Northern and Southern Hemispheres Modern reconstruction reproduced from Schaubach's edition of Aratus in the Loeb Classical Library edition By courtesy of the editors

FIG 9, p 73 THE WANDERINGS OF THE CELESTIAL NORTH POLE OF THE EQUATOR AROUND THE POLE OF THE ECLIPTIC (cp above, p 29, fig 2) from Sir James Jeans, *The Stars in their Courses*, Pelican edition 1939, p 38 (Courtesy of the Cambridge University Press and Penguin Books Ltd) The diagram shows the positions occupied by the pole at various dates Even 3,000 years ago the pole was 17 degrees further south than now so that Europeans could see parts of the southern sky which are now invisible This explains why many of the southern constellations have ancient Greek and Latin names

FIG 10, p 75 FRAGMENT OF A CUNEIFORM DESCRIPTION OF THE CONSTELLATIONS OF THE OLD ASSYRIAN SKY (About 1000 B.C.) found at Assur (Museum of Berlin, *Vorderasiat Texte* No 9,428, frontside, published by Prof Weidner, *Archiv für Orientforschung*, vol iv, p 76) Reproduced by courtesy of the editor

As a specimen of the text we give a translation of lines 12-17 describing our *Cancer* and *Leo*

12 "The constellation *Cancer*" (AL LUL = *shuttu*), "an instrument" (*abzammaku*) "stars are engraved on its sides" "Betw(een) them (the stars) are compressed, they ride upon each other" (*ahamesh rakbu*, the *Nubecula* in the "Crab") "One star is engraved on its top" (or "head" *reshushu*) "The star Juppiter" (SAG ME GAR = "Leader oracle giving") "is engraved before it" (see fig 24) "The constellation *Leo* (UR-GULA) is be(hind the star SA)G ME GAR engraved" (See fig 24)

17 "The constellation *Leo*" (UR MAH = "dog mighty" = *neshu* = lion) contains (SHAB) (the star) of *Regulus* (*shar n* = 'of the king') Towards his tail one star, on his mane and (empty) engraved on his breast" (see figs 24 and 25)

FIG 11, p 76 EGYPTIAN DIAGRAM OF THE SKY IN THE RAMESSEUM OF THEBES, reprod after Lepsius, *Denkmäler*, vol vi, pl 137 in Max Ebert, *Reallexikon der Vorgeschichte*, vol xii pl 107

The crocodile—on the back of the hippopotamus-goddess *Reret*, holding the “landing peg” of the sky, as the Egyptians called the pole star, is our *Draco* (A medieval sculpture representing this strange group of animals is in the quadrangle of Magdalen College, Oxford. There must have existed an illustrated Latin text describing the *Sphæra Barbarica* similar to the *Hermes Trismegistus* recently discovered in the British Museum *Cod. Harleianus*, No 3731.) The crouching lion opposite is our *Leo*, the Scorpion goddess *Serget* above him is the goddess *Ishhara* above the constellation *Scorpio* in the Babylonian sky, our *Serpentarius*, the hawk below her feet, Ovid’s *Milvus*, the *Accipiter* of “Hermes Trismegistus,” is our *Cygnus*. The crocodile below the lion is *Cetus* facing *Orion*—as the two figures can be seen on the planisphere of Timochares, pl v. The Bull inscribed *meshetyw* is our *Taurus*, the mythical animal the “haunch” of which is seen to represent *Ursa maior* on the sarcophagus of Asyut, pl vii. The falcon headed Horus-god below it is probably *Boötes*.

FIG 12, p 77 THE FISH SKIN CLAD FISH-EATER GOD OANNES (HANI), patron god of the cuneiform scribes, mythical representative of the fish eating, fish skin clad tribes of the coast of Mekran and Baluchistan who settled at the mouth of the Euphrates and Tigris and taught writing, reading, stargazing and agriculture to the ancient Sumerians (see Rob. Eisler, *Orpheus the Fisher*, London, 1923, pl xvi). Bas relief found in the palace of Assurbanipal in Nimveh (Kalahh), now in the British Museum.

FIG 13, p 79 THE ROTATION OF THE EARTH circling around the Sun causing the four minutes a day difference between stellar and solar time and the varying aspect of the constellated night sky in the course of the year. After Sir James Jeans, *The Stars in their Courses*, p 152, fig 2.

FIG 14, p 81 EGYPTIAN “HOUR WATCHER” (HOROSKOPOS) sitting on the roof of the temple facing a fellow star watcher who sights with palm staff and plummet (fig 17) “the stars of the twelve hours of the night”—listed in the twelve columns on the right side—standing “between his eyes,” “over his right eye,” “over his left eye,” “over his left shoulder,” “over his right shoulder.” One of the watchers observes the stars on the southern, the other those on the

northern sky The twelve horizontal cases contain the names of the stars to be watched for every hour of the night

FIG 15, p 83 FRAGMENTS OF TWO CIRCULAR CLAY TABLETS inscribed in cuneiform signs with the names of the Babylonian "ten day stars"—in the original called "Twelve" (months) "Three stars apiece" Four of the 36 are planets, thirty two are fixed stars (or constellations) corresponding to the division of the skipper's astral compass-card in 4, 8, 16 and finally 32 "rhumbs" The fragments after L W King, *Cuneiform Texts in the British Museum* XXXIII, pl II

The tablet Kujunjik 14,943 81-7 2 94 of which two fragments survive was written by the eighth century B C scribe Nabu Zuqup-qenu, chief clerk for thirty-three years to King Sargon II (722-705 B C), who wrote and signed a great many astrological tablets now in the British Museum as well as a copy of the Gilgamesh epic He came from the Assyrian town Kalkhu just as that "man of Kalkhu" (*Kal kha a*) who is said to have acted as soothsayer for King Agamemnon at the siege of Troy and is mentioned by Homer under the name of Calchas which has no meaning in Greek An inscription of this king Sargon (*Cuneiform Inscriptions of Western Asia*, vol I, pl 36, line 21) claims for his fleet to have "caught like fish in a net the Ionian pirates and to have restored peace for Tyre." So the Ionian pirates' and their bard Homer are more than likely to have heard of the Assyrian "shepherd of men" and his *Kalkha* diviner and chief clerk

FIG 16, p 84 RECONSTRUCTION OF THE WHOLE STAR DIAL on the basis of parallel lists—not in circular form—by Albert Schott, *Zeitschrift d Deutschen Morgenland Gesellschaft*, vol 88, *Neue Folge*, vol XIII, p 33

FIG 17a, p 85 EGYPTIAN SPLIT PALM-STAFF of the star watcher—called *phoenix astrologias* by the Greeks—and a plummet for sighting the stars and determining the hour of the night (Erman Ranke, *Ägypten* 400) See figs 14 and 17

FIG 17a, p 85 Woodcut from the Scottish "*Shepherd's Calendar*" Shepherds determining the hour of the night by sighting the stars with a plumb-line The dial on the right is the equivalent of the cuneiform star dial shown in our fig 16, the only difference being that the original "decans" or "ten day

stars" (above, p 82 f) are replaced by 10° sectors of the zodiacal constellations

FIG 17b, p 86 Left SHEPHERD SIGHTING THE POLE-STAR over his plumb-line from the *Compost et Calendrier des Bergiers*, Paris 1493 (a similar figure in the English and the Scottish "*Calendar of Shepherdes*")

The woodcut on the right shows the two plumb-lines for sighting the hour stars suspended from a rod supported by two tree forks This rod can be turned by means of a kind of rectangular handle from which one of the two plumb-lines hangs down Its position can therefore be easily shifted from the right to the left side for a given maximum elongation in both directions This is the equivalent of the Egyptian hour watcher observing a given star "over his left shoulder," "over his left eye," "between his eyes," "over his right eye," and finally "over his right shoulder" The stars sighted are "the Great W of Cassiopeia," the "Plough" (*epinnu*) of the Babylonian mentioned on the star dial discussed p 83, reproduced fig 16

FIG 18, p 88 CHINESE ASTROLOGER'S MIRROR. The reader will remember that the sky is called "a molten mirror" in Joh XXXVII, 18, the magic mirror of the Celtic wizard Merlin, the one used by the witch Klingsor in Wagner's *Parzifal* and Dr John Dee's (1527 1608) mirror in Lord Lonsborough's collection It shows in the outer ring the names, in the following circle the alignment figures of the twenty-eight constellations marking the "stations of the moon," in the next circle the eight geomantic symbols, in the next the twelve animals of the *Dodecahoros*, also used for the purpose of naming the twelve years of a Jupiter cycle in the Chinese and Central Asiatic system of dating historical events After Edouard Chavannes, *Le Cycle Turc des Douze Animaux*, T'oung Pao, Serie II, vol VII, No 1, fig VI bis

FIG 19, p 91 THE PRECESSION OF THE EQUINOXES FROM 1400 B C to 5000 A D after Lt-Col J E Nicholson, *The Star in the East*, Douglas, I o M (1939), p 8f

FIG 20 p 90 THE FULL MOON BETWEEN THE PLEIADES AND TAURUS Babylonian drawing engraved upon a clay tablet of the Seleucid period (3rd century B C) now in the Museum of Berlin (VAT 7851) found in Warka, the

ancient *Uruk*, written *Erech* in our Bibles. In the disk the Babylonian image of the "Man in the Moon" as a hero holding in his left a lion by the hind leg and swinging it in the air, before clubbing it with his right hand. On the left side the seven stars of the Pleiades. The cuneiform signs between the upper three and the lower three stars read in Sumerian MUL-MUL "star star," meaning a star-cumulus. On the right side is *Taurus*, figured as a humped zebu bull. Reproduced after Ernst Weidner, *Archiv für Orientforschung*, vol. iv, 1927, pl. v, No. 1.

FIG 21, p. 92. ARCHAIC FUNERAL VASE FOUND AT THEBES IN BOEOTIA, now in the National Museum of Athens No. 5593, about 700 B.C. (reproduced after P. Wolters, *Ephem. arch.* 1892, p. 221, pl. x, fig. 1). The Mother-goddess with a fish between her legs corresponds to the representation of *Andromeda* with a fish between her legs in the star-map of the Arabic astronomer 'Abd ar Rahman as Sufi (pl. xiii b), and in the *Libros del Saber de Astronomia* of King Alfonso the Wise of Castile. On the left side is the Bull's head suspended for the god Lugal Marada by Gilgamesh—i.e., the group of stars known as the *Hyades*, on the right side the Bull's "haunch" which the hero has "thrown into the face" of the goddess Ishtar who "raises a wailing over it," i.e., *Ursa maior*—as shown with the "wailing" goddess on the sarcophagus of Asyut (pl. vii). The goddess stands between the two lions *neshu* and *neshtu*, "Lion" and "Lioness" of the Babylonians, *Leo*, and the "Water-Lion" to be seen on the planisphere of Denderah (pl. vi). The crosses and swastikas represent stars—as on many Greek vase paintings.

FIG 22, p. 93. ISRAELITES WORSHIPPING THE GOLDEN CALF, the constellation *Taurus* appearing in the sky. Painting by the Florentine Filippino Lippi (1460-1504), now in the National Gallery, London. (Reprod. after a drawing by Paride Weber in Salomon Reinach's *Repertoire des Peintures*, vol. IV, p. 17 bottom.) Halftone reprod. *Burlington Magazine*, vol. XX, pl. to pp. 171 f. (G. F. Hill). The interpretation of the Golden Calf as an image of the constellation *Taurus* is based on the commentary to *Exod. XXXII 1-4* by Abraham ibn Ezra—a master of astrology—printed in the margin of all the big rabbinic Hebrew bibles.

FIG 23 p. 94. THE ZODIAC MAN (*MIKROKOSMOS*)

after Ketham's *Fasciculus Medicinæ* (1491), Old Ashmolean Picture Post card series Nr 71. Note the one of the Twins (*Gemini*) represented with the "sickle axe" mentioned in the description of the "Great Twins" in the cuneiform description of the constellation found in Assur (about 1000 B C), an instrument now known as a "pruning hook"

FIG 24, p 97 OUTLINES OF THE CONSTELLATIONS LEO, HYDRA, CORVUS AND VIRGO CARRYING THE "CORN EAR" (*SPICA*) Babylonian Tablet of the Seleucide Period in Warka, the ancient Uruk, the Biblical Erech. After Bruno Meissner, *Babylonien und Assyrien*, vol II, Heidelberg 1926 407, fig 45

FIG 25, p 97 THE EIGHTEEN STARS OF THE CONSTELLATION LEO, with the moon and the three planets Mars—here called *Pyroëis* "the fiery one" of *Herakles*, Mercury—here *Stilbôn*, "the scintillating one" of Apollôn—and Jupiter—here *Phæthôn*, "the shining one" of Zeus—in the horoscope of King Antiochus I (about 60 B C) of Commagênê, represented on the monumental tomb of the king. After Bouche Leclercq, *L'Astrologie Grecque* p 439, fig 41

FIG 26, p 102 SCORPIO AND SAGITTARIUS (a) The Sickle Moon, the Scorpion man and his wife guarding the entrance to the tunnel in the northern mountain through which the sun god is said to pass every night in the Gilgamesh epic, i.e., the Tigris tunnel described and illustrated in C F Lehmann Haupt's *Armenien*, vol II 1, Berlin Leipzig 1906, pp 839 f. Babylonian seal cylinder in the museum of The Hague, Cat. No 141, 8 after Menant *Recherches sur la Glyptique Orientale*, vol I, p 97, fig 56

(b) Sagittarius and Scorpio on a boundary stone of the Cossæan King Melishipak of Babylon

(c) Sagittarius and the little boat (*ploion*) at the feet of the centaur on the planisphere of Dendera. After Hincke, *op cit* figs. 32 35

FIG 27, below, left side, p 105 A "HORNED" FISH (*NASEUS UNICORNIS*) AND EAGLE-RAYS from an Egyptian bas-relief representing the expedition undertaken under Queen Hatshepsowet to the land of Punt (Greek *Opônê*, now Hafun) in East Africa (reprod after Duemichen, *Die Flotte einer ägyptischen Königin*, pl xxii, Nr 19 and 22)

Above HORNED FISH REPRESENTING THE CONSTELLATION *CAPRICORNUS* IN THE ZODIAC ON THE CEILING OF THE TEMPLE OF BEL AT PALMYRA (TADMOR), reproduced from Monsieur Cavo's design in Monsieur Seyrig's article *Syria*, vol xiv, 1933, p 258, fig 5

Right side CAPRICORNUS, OVER HIM THE HORUS GOD OF THE PLANET MARS (see above, p 162) on the planisphere of Denderah after Hincke, *A New Boundary Stone*, Philadelphia 1907, p 102, fig 36

Below CAPRICORNUS AND THE HEAD OF A STRAYING SHEEP (Lu Bad = *Bibbu*, above, p 168), *ie*, a planet Bas-relief on a Babylonian boundary stone, Hincke, *lc*

FIG 28, p 116 PLANETARY TRINES CORRELATED TO THE "FOUR ELEMENTARY QUALITIES" OF ARISTOTLE (after Bouche Leclercq, *L'Astrologie Grecque*, fig 21)

FIG 29, p 175 The Babylonian Sungod Shamash holding a saw (*shasharu*), the Moongod Sin, sickle-moon and evening star and a worshipper adoring this divine Triad The mountain pass between the two summits of the cosmic mountain in the north, closed with gates guarded by two sentinels is the Caucasian gate barred by iron doors

Hematite Seal Cylinder formerly in the collection of Baron Roger, Paris Reprod after Felix Lajard, *Recherches sur les mysteres de Mithra*, pl xxxviii, No 5

FIG 30, p 190 (a) THE BIG DRAGON—"LEVIATHAN," *ie*, the "wreathed," the "coiled serpent" (*nahash akalothôn*, Isaiah XXVIII, 1)—amidst the celestial "houses" of the planets, *ie*, the constellations of the sky Bas-relief on the round top of a Babylonian boundary stone found at Susa (No 20) After Hincke, *op cit*, p 95, fig 30

(b) The big Dragon—stretched out over the sky—Leviathan, the "fleeing serpent" (*nahash bara*, Isaiah XXVII, 1) with six of the celestial "houses" on his back, six of them under his belly Bas relief on a Babylonian boundary stone of King Nabu shum ishkun, now at Berlin After Hincke, *ibid*, p 96, fig 31 See Robert Eisler, *Weltenmantel u Himmelszelt*, vol II, p 390, note o

FIG 31, p 192 THEMA MUNDI The position of the

planets in the zodiac at the time of the world's creation Reproduced after Bouché-Leclercq *L'Astrologie Grecque*, p 187, fig 23

FIG 32, p 200 THE PLANETS AND THE DAYS OF THE WEEK

FIG 33, p 203 THE "EXALTATIONS" AND "DEPRESSIONS" OF THE PLANETS after Max Ebert, *Reallexicon der Vorgeschichte*, vol XII, p 429, col b

FIG 34, p 211 THE PLANETARY HOURS OF THE DAY, reproduced after Bouche Leclercq, *op cit*, p 480, fig 42

FIG 35, p 215 THE "HOUSES" OF THE PLANETS AND THE ROMAN CALENDAR, reproduced after Bouche-Leclercq, *op cit*, p 189, fig 24 bis

FIG 36, p 216 SIGNS "SEEING" AND "HEARING" EACH OTHER Reproduced from Housman's edition of Manilius' *Astronomicon*, vol II, p 18, where the conflicting texts from Hephæstion of Thebes and Paulus Alexandrinus on the one hand, Ptolemy on the other are quoted and discussed Courtesy of the Cambridge University Press

FIG 37, p 216 SIGNS "LOVING" AND SIGNS "HATING" EACH OTHER, same source as fig 36

FIG 38, p 217 DIAMETRICALLY OPPOSED SIGNS Reproduced from Housman's Manilius, vol II, pp 15 *sequ.*

FIGS 39 41, pp 218 219 TRIGONA SEXTILE ASPECT SQUARE ASPECT DIAGRAM OF ALL ASPECTS SHOWING THE "SEVEN RAYS" EMITTED BY EACH PLANET All reproduced after Housman's Manilius where the relevant texts can be studied in the original wording

FIG 42, p 222 PLANETARY TRINES AND DIRECTION OF THE WINDS ACCORDING TO PTOLEMY Reproduced from Bouché-Leclercq, *Astrologie Grécque*, p 212, fig 25

FIG 43, p 222 PLANETARY TRINES AND MAIN WINDS ACCORDING TO GEMINUS, FIRMICUS AND

PAULUS OF ALEXANDRIA Reproduced after Bouche-Leclercq, *op cit*, p 213, fig 16

FIGS 44 and 45, pp 231-232 APPARENT "PHASES" AND "STATIONS" OF THE PLANETS JUPITER AND MARS
Reproduced after Bouche Leclercq, *L'Astrologie Grecque*, pp 120 f, figs 1 and 2

FIG 46, p 235 THOMAS DIGGES' DIAGRAM OF THE COPERNICAN UNIVERSE From his *Perfect Description of the Celestial Orbs according to the most ancient Doctrine of the Pythagoreans*, London 1598 The reader will notice that Thomas Digges still believes the "infinitely" extended sphere of "starres fixed" to be the "immovable pallace of felicitye," the "*habitable for the elect*" It is only quite lately that this place has been transferred to a "transcendent" location "outside the space of our experience"

FIG 47, p 250 CYCLUS DUODECIM MENSIIUM FRUCTUUMQUE The fruits and seeds maturing in the twelve months of the year Astrobotanical diagram in Cosmas Indicopleustes' *Topographia Christiana*, ed Migne Reproduced from *Patrologia Græca*, vol LXXXVIII, col 470

FIG 48, p 253 THE ASTROLOGICAL EXPLANATION OF "VENEREAL" DISEASE Woodcut by Albrecht Durer illustrating an "iatro-mathematical" broad sheet on the ætiology of syphilis by Theodericus Ulsenius (1496)

XXXIV

BIBLIOGRAPHY

THERE is an immense English literature on astrology written by authors who believe in this technique of forecasting the future and explaining the past. A very full list of titles may be found in F Leigh Gardner's *Catalogue Raisonné of Works on the Occult Sciences*, Vol II *Astrological Books*, with an introductory sketch of the history of astrology by Dr William Wynn Westcott

The number of books written in English from the critical

point of view of exact science is so small that not even the proverbial fingers of one hand are needed to count them.

The short list begins with an inconsiderable book "*Against Astrology*" by one John Chambers, printed in 1691—i.e., during the lifetime of Newton, and already quoting his now famous *Principia Mathematica* (published in 1687).

Then there is a book by T. H. Croft Moody, Professor of Mathematics, author of "*Scrutator*" called :

"A complete refutation of Astrology—consisting principally of a series of letters which appeared in the '*Cheltenham Chronicle*' in reply to the arguments of Lieut. Morrison and others in which its principles are proved to be unphilosophical, opposed to the happiness of Man and contrary to the precepts and doctrines of Revelation, with additional remarks, Notices of the Royal Nativities and an Introduction, containing a sketch of the Ancient and Modern History of this system of Iniquity, also observations on the heathen Prophets and anecdotes of several astrologers' published at Cheltenham 1838, 12°.

The author had a number of heated discussions with "*Zadkiel*"=Morrison in the rooms of the Athenæum Club in London, which is still a flourishing centre of British intellectual life where the present writer has enjoyed many delightful hours and the kindest hospitality in the years between the two world wars.

Although Moody was a mathematician lecturing before the Philosophical Society on "Trigonometry Applied to Astronomical Calculation," he believed in a personal Devil, and declared himself "satisfied that the art of astrology proceeds from the Father of Lies" and owes its existence to "the temptations of the Prince of Darkness."

The little volume is very amusing, and well worth reading for anyone who can find it in a library or antiquarian bookshop. The London Library, the Bodleian and the Athenæum Club have it on their shelves.

G C Lewis, *An historical survey of the Astronomy of the Ancients*, London, 1862, gives a short history of ancient astrology according to the sources available to the author at this time on pp. 291-314. The introduction to A. E. Housman's major, original edition of Manilius' *Astronomicon* (Cambridge University Press 1903-1930) gives an excellent commentary to

what this great Roman poet knew about astrology, having learnt it, probably, from Thrasyllus, astrologer of Emperor Tiberius or from Sosigenēs who helped Julius Cæsar to construct what is known as the Julian calendar

Next there are the late Dr Charles Arthur Mercier's Fitzpatrick Lectures delivered on the 6th and 11th of November, 1913, before the Royal College of Physicians ("*Astrology in Medicine*" Macmillan, 1914) The author, a fellow of the Royal College, an alienist, made no attempt to treat his subject as a historian, does not even know Bouche Leclercq's book mentioned below, but treats his subject on the basis of some desultory reading in old medical text books—*e g*, Arnaldus de Villanova To the fact that 'Astrology is already dead It has been dead so long that it no longer stinks' (p 5) he thinks he can find a near parallel in "the fate of Aristotelian logic, which is supposed to be equally dead although we might still find by diligent research professors who know the meaning of Barbara and Celarent, of Bocardo and Baralipon and can even subject them to the orthodox manipulations of logical art" These words were spoken and set up in print two years after Bertrand Russell, in his masterly book "*Logic and Mysticism*" (1918), had called the attention of English speaking readers to the magnificent achievements attained by modern formal logic at the hands of Peano and Frege

Elizabeth Hall, *Astrology*, London (Watkins) 1924 is a slender and amateurish production

G J S Thompson (M D), "*The Mystery and Romance of Astrology*," New York, London, Paris (Brentano's) 1929 is—as the title suggests—a popular book only, but contains a great number of most valuable illustrations reproduced after manuscripts, books and prints in the British Museum, unfortunately without precise indications of the respective sources The aged author himself has not kept his notes and since the treasures of the British Museum are inaccessible for the duration of the war, I have not been able to identify some of the most important ones The book is out of print, the publishers have gone out of business, but copies are in the Bodleian, and many other libraries

If this is the whole contribution made by British scientists to the fight against mass-superstition, the record of the official leaders of established religion is no more impressive

Clement F Rogers, M A, Professor of Pastoral Theology, King's College, University of London, published in April, 1941,

a slender booklet "*Astrology in the Light of Science and Religion*," Students Christian Movement Press.

It is a shallow compilation based on secondary and tertiary sources such as the article "Astrology" in the *Encyclopædia Britannica*. (It might be worth recording, incidentally, that this very good article was originally written by the late Dr. Richard Garnett, Director of the British Museum Library, a sound scholar—not of course a scientist—who was known to believe in astrology.*) To characterise professor Roger's qualifications as a historian of ancient thought it will be sufficient to quote from p. 56 of his book the following statement: "As long as men believed in many gods, science was impossible. There was no idea of unity in creation, no conception of universal laws" (!!), the truth being, of course, that the—in itself mythological—concept of "universal laws" ("decrees of heaven and earth") was held and professed by the tablet-writers who produced the library of Assurbanipal (above, p. 233 l. 1 f.), and developed to its later forms by the pagan Greek polytheists. But the professor cannot be expected to know more about Greek philosophy than he does about Greek and Roman mythology. He writes, e.g. (p. 44): "*Uranus* was a Roman god identified with the Greek god *Chronos* who ate up his own children." Hitherto classical scholars had been taught that it was *Kronos* who ate up his children, and that *Kronos* was the son of the equally Greek god *Uranus*. We live and learn, indeed!

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* He published in the *Classical Review* of 1899 an article "*On Some Misinterpretations of Greek Astrological Terms*" (videl in the first edition of Liddell-Scott's *Greek-English Lexicon*).

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On the origins of our planetary week day names see F H Colson, *The Week*, Cambridge, 1926 Every one of the six volumes of L Thorndike, *A History of Magic and Experimental Science* (New York, 1923 to 1941) contains a wealth of information about the astrological literature of each of the successive periods covered by this most valuable book See also Theodor Otto Wedel, "*The Medieval Attitude Towards Astrology Particularly in England*," *Yale Studies in English*, Vol LX, New Haven, 1920

The present writer is about to publish at the Cambridge University Press a profusely illustrated volume on "*Durer's Melencolia I and the Horoscope of Emperor Maximilian I*" dealing with the court astrologers of Emperors Frederic III and Maximilian I and those great scholars, George of Peuerbach and Johannes Regiomontanus who started at Vienna and Nuremberg a new technique of astronomical observation, thus initiating the scientific age The book will show that four different mutually incompatible horoscopes were prepared for

Emperor Maximilian I, one of them—illustrated partly by Durer, partly by Leonhard Beck—was intended to create the belief that Maximilian was the saviour-king announced in Vergil's Fourth Eclogue and would victoriously drive the Turks out of Europe as the leader of a universal crusade—Nothing of all this ever came true

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On the lenseless sighting tube of the ancient astronomers (above, p 238) an article by the present writer with two ancient

illustrations of the instrument will be found in a recent issue of Aldo Mieli's periodical *Archeion*, accepted in 1943, which has not yet been received in this country

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Boll, W Kroll and others have published the *Catalogus Codicum Astrologicorum Græcorum* (Brussels) This work has stimulated a great number of remarkable publications

Franz Boll, *Sphæra*, Leipzig, 1903 id, "Erforschung antiken Astrologie," *Neue Jahrbucher* 21 (1908) W K Boll, "Zur Geschichte der antiken Astrologie," *ibid*, 7 (1901) (Bezold and Fr Boll, 'Reflexe babylonischer Keilinschriften griechischen Schriftstellern,' *Sitz-Ber d Heidelberger Ak* 1911 E Pfeiffer, *Studien zum antiken Sternglauben*, Leipzig, 1916 There are articles by Boll on the week (*Hebdomada*) and on *Planeten* in Roscher's *Lexicon der Mythologie*, another one, *Sterne und Sternbilder*, by Boll, edited after death by W Gundel On the Twelve Hour stars in the East see Boll, "Der ostasiatische Tiercyclus im Hellenismus in the sinological periodical *T'ung Pao*, Vol 13, 1912 Boll, *Aus der Apokalypse Johannis*, Leipzig, 1914, explains astrological elements in the Revelation attributed to St John

The late Prof A Warburg's *Gesammelte Schriften*, Vol 1, contain a number of most important monographs on astrology elucidating the complicated way these ideas spread from the East to west and then eastwards again and westwards again P Fritz Saxl has published two important catalogues of Latin illustrated astrological manuscripts (*Sitzungs Berichte der Heidelberger Akadem*, 1915 and 1927) Also a paper on 'The Zodiac of Quseir 'Amra' in K A C Creswell's "Early Muslim Architecture," Vol I, Oxford, 1930, and another, *La Farnese astrologica di Agostino Chigi*, *R Accademia d'Italia, Collezione La Farnesina*, 1 (Roma 1934) Valuable illustrations have been collected in A Hauber's *Planetenkinderbilder und Sternbilder* Strassburg, 1916 (not in the Bodleian, the British Museum copy seems to have perished in the destruction by enemy action of the section "Art and Archaeology") See also B A Fuchs, *Die Ikonographie der sieben Planeten*, Munich (Diss) 1907 K Sudhoff, *Iatro-mathematische im 15 und 16 Jahrhunderte* Breslau, 1902, collected the material concerning medical astrology G Hellmann, *Beiträge zur Geschichte der Meteorologie*, II, 1901 deals with astro-meteorology F C Burkitt and Franz Cumont in *Allo*, IX, 1909, discuss astral geography with reference to the "night visions" of Daniel Their analysis is completed by the present writer in his book *Jesous Basileus*

- London (Cassel) 1933 publishes two anti astrological uses of the fourteenth century and five typical astrological casts of the same age
- In hour stars and planets see W Gundel, "Stundengotter," *Deutsche Blätter für Volkskunde* xii 1913, pp 100ff On the hour stars the same author's volume "Dekane und Dekansterner, Studien der Bibliothek Warburg" Nr xix, Hamburg, Frankfurt, 1936 (with a very weak Egyptological introduction by Fried Schott) To Wilh Gundel we are indebted for the national discovery of a Latin and an old French version of the lost Græco-Egyptian astrological texts attributed to Hermes Trismegistus in the *Codex Harleianus*, Nr 3731 (15th century) in the British Museum and in *Codex fr 613* in the Paris National Library His excellent edition is printed in *Abhandlungen der Bayer Akademie d Wiss phil Abh*, 12, Munich, 1936 Gundel has also published ample additions to the 3rd and 4th editions, Leipzig, 1926 and 1929, by v Bezold and Fr Boll, *Stern Glaube, Sternreligion und Sternkunde* Leipzig, 1923, and to Franz Boll's article "Sternkunde" at the end of Roscher's *Mythologisches Lexikon* (Leipzig 1907) His last paper on astrology is published in the *Mélanges Cumont*, Brussels 1936 Just before the outbreak of the war he was putting the last touches to a general history of astrology which remained a torso when he died on All Souls' Day 1945, having been arrested by the Gestapo and released, too late to be saved
- Wilh Capelle, "Älteste Spuren der Astrologie bei den Griechen," *Hermes* LX (1925), pp 373 ff has shown traces of acquaintance of Greek fifth century B C physicians with doctrines of Babylonian astrology
- Jerenyi, "Astrologia Platonica," *Archiv für Religionswissenschaft*, Vol XXII, 1934, pp 245 ff, deals with the star of Plato So does E des Places, "Platon et l'astronomie grecque," *Mélanges Cumont, Annuaire de l'Inst de Philol et d'Histoire Orient*, IV, Brussels 1936, pp 129 ff On Plato's ideal guest see Cumont, *loc cit* and W Jäger, "Astoteles," p 133 P Schnabel has published a special monograph on *Berosos* (Leipzig, 1923)
- The tomb of *Petosiris* is published by Lefebvre *Le tombeau de Petosiris* 1924
- In astrology in Renaissance Italy, cp Jacob Burckhardt, *Die Renaissance in Italien* 12th ed, 1919, Vol 2, pp 183 ff Engl trsl, published by Phaidon Press Oxford, 1945) Soldati's

Italian book on astrological poetry of the fourteenth and fifteenth centuries is in the Taylorian Library in Oxford and in the British Museum. C. Zanotti Bianco, *Astrologia e Astronomia*, Torino (Becca) 1905, is in the Radcliffe Science Library, Oxford. Cp. also Gio. Boffito, *Perchè fu condannato al fuoco l'astrologo Cecco d'Ascoli*, Roma, 1900, p. 25. Maurice Garçon, *En marge de Nostradamus, Le procès de l'astrologue*, priv. printed Paris 1940 is well worth reading if you can get hold of it.

On Arabic astrology see Nallino's articles in the *Encyclopedia of Islam* and in Hastings' *Encyclopædia of Religion and Ethics*, Vol. XII, pp. 88 ff. and his book on the subject written in Arabic and published in Cairo; also Alfred Wiedemann, "Zur Geschichte der Astrologie" in the periodical *Das Weltall*, 1922 and 1923, and Paul Kahle, *Nautische Instrumente der Araber*, in the Pavry Anniversary Volume, Oxford 1933, pp. 170-184.

Franz Cumont, *L'Egypte des Astrologues*, 2 vols., Brussels, 1939, is not at all concerned with Egyptian astrology, but with the Græco-Egyptian civilisation of Egypt as reflected in the astrological texts.

Sir Isaak Newton's manuscript notes concerning alchemy (above, p. 240) are in possession of Dr. Geoffrey Keynes and about to be published by this great scholar and fortunate collector.

On Babylonian chemistry and metallurgy as we know it now through R. Campbell Thompson's publication of the cuneiform chemical recipes in the British Museum (Luzac 1929) and the description of Greek alchemy, of Hesiod's, Plato's and the Book of Daniel's speculations on metals in the constitution of the macro- and microcosmos the present writer has published two articles in the *Zeitschrift für Assyriologie* and the *Revue de Synthèse Historique* in 1926.